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ABSTRACT

This report describes the background and links among education, training, labor market, economy, and society. Part 1 deals with the statutory, institutional, and political background to vocational education and training (VET), steering of VET systems, funding, and performance of VET systems and the European context. Part 2 discusses research on the socioeconomic frame of VET; developments and changes to the supply and demand sides; macro- and microeconomic costs and benefits of VET; and research on increasing employment by creating new jobs, and future trends in work and skills. Part 3 analyzes individual education and training decisions and implications for vocational guidance; correlation of structural change with apprenticeship training; transition from VET to the labor market; CVT's objectives and actual situation; and problems of disadvantaged groups in training and work. Part 4 discusses proposals on how to proceed with curricular research, role of key qualifications, new learning formats and venues using new technologies, and nonformal learning. Part 5 focuses on principles, methods, and limitations of comparative VET research; European mobility; and recognition and transparency of skills and qualifications. Part 6 offers general conclusions. Appendixes contain 895 references and include: information on VET research institutions, selected networks for research cooperation, sources for descriptions of VET systems in Europe, European Union programs related to VET, and international statistics and classifications. (YLB)

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Training for a changing society

A report on current vocational education and training research in Europe 1998

CEDEFOP

Training for a Changing Society

A Report on Current Vocational Education and Training Research in Europe

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A report on current vocational education and training research in Europe

Author:
Manfred Tessaring
(CEDEFOP)

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Postal address:
P.O.B. 27 – Finikas, GR-55102 Thessaloniki
Tel.: 30-31+49 01 11
Fax: 30-31+49 01 02
E-mail: info@cedefop.gr
Internet: http://www.cedefop.gr

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Country abbreviations

A	Austria
AUS	Australia
B	Belgium
CH	Switzerland
CND	Canada
CS	Czechoslovakia
D	Germany
DK	Denmark
E	Spain
EL	Greece
EU	European Union
F	France
FIN	Finland
GB	Great Britain
H	Hungary
I	Italy
IRL	Ireland
ISR	Israel
L	Luxembourg
N	Norway
NL	Netherlands
P	Portugal
PL	Poland
S	Sweden
TAI	Taiwan
UK	United Kingdom
USA	United States of America

Frequently used abbreviations

(for abbreviations of networks and institutions cf. Annex)

AT	Apprenticeship Training
CVT	Continuing Vocational Training
GDP	Gross Domestic Product
ICT	Information and Communication Technologies
ISCED	International Standard Classification of Education
SMEs	Small and medium sized enterprises
VET	Vocational Educational and Training
WAP	Working Age Population

Contributions to the report on VET research

The synthesis report is in major parts based on the following original contributions carried out in 1997. They are published separately by CEDEFOP under the responsibility of the authors.

Note that this synthesis report mainly refers to preliminary versions of these papers.

BJORNAVOLD, J.: *Validation and recognition of non-formal learning: the questions of validity, reliability and legitimacy*

CAROLI, E.: *Technical change, work organisation and skills: Theoretical background and implications for education and training policies*

CLASQUIN, B.; GERARDIN, F.; TORESSE, V.: *Research on transition*

CORVERS, F.: *Sector-specific intermediate and high skills and their impact on productivity and growth in manufacturing sectors of the European Union*

DESCY, P.; TESSARING, M.: *Migrants in the European Union: an empirical analysis*

DYBOWSKI, G.: *New technologies and forms of work organisation. Impact on vocational education and training*

ERTELT, B.-J.; SEIDEL, G.: *Information requirement for individual occupational decisions*

GELDERBLOM, A.: *Apprenticeship: dead-end sectors and occupations?*

HULLEN, G.: *Demography, labour and training: State of research and European developments*

KAMARAINEN, P.; STREUMER, J. N.: *Curriculum development, new learning environments and transfer of innovations in Europe*

KATH, F.: *Financing of vocational training*

KAU, W.: *Costs and benefits of vocational training on the microecenomic level*

KOCH, R.; REULING, J.: *Institutional framework conditions and steering of initial vocational training* *using Germany, France and Great Britain as examples*

Kristensen, S.: *Transnational mobility in a VET context*

Lauterbach, U.; Mitter, W.: *Theory and methodology of international comparisons*

Lith, U. v.: *Costs and benefits of vocational training. Contribution to economic growth, individual and social returns*

Muenk, D.; Lipsmeyer, A.: *Objectives, realisation and organisation of continuing vocational education and training*

Nicaise, I.; Bollens, J.: *Training and employment opportunities for disadvantaged persons*

Sellin, B.: *Recognition of certificates and transparency of skills in the European Union*

Straka, G. A.; Stockl, M.: *New learning formats and venues in the context of information and communication technologies*

Streumer, J. N.; Odenthal, L.: *Vocational education and training in Europe in the process of change*

Tatch, J.; Pratten, C.; Ryan, P.: *Employment structures and labour market aspects related to VET*

Tessaring, M.: *The future of work and skills - visions, trends and forecasts*

Preface by Édith Cresson

In my capacity as Commissioner for Science, Research, Human Resources, Education, Training and Youth, I asked CEDEFOP in 1996, within the framework of its medium-term priorities, to put together an overview of European research on vocational training as the beginning of a regular reporting system.

I am very happy that CEDEDOP has now submitted its first report "Training for a changing society". The Commission appreciates the work involved and hopes that this document will meet with a widespread response and will be used by research, politicians and practitioners. This report is a first step and should be regularly updated in close co-operation with all those concerned.

The report on European vocational training research has the task of providing an overview of the current state of vocational training research in Europe - both its theoretical and methodological concepts, its results and also its implications for politicians and practitioners. The starting point is the joint declared goal of research scientists, politicians and practitioners - both on the national and European level - to fight unemployment, under-employment and social marginalization, to promote innovation and competitiveness and, in this way, to increase the prosperity of individuals and society as a whole. Access to high standard education and training, the maintenance and recognition of knowledge and competencies are the most important means of reaching this goal.

The report provides detailed insight into the background and many links between education, training, the labour market, economy and society. The complex nature of and rapid change in our social and economic environment throw up a whole series of questions which are of direct relevance for education and training - questions which are often less easy to answer than they are to ask. Innumerable scientists and research workers from almost all disciplines are addressing these issues in Europe and elsewhere both from the theoretical and the application-oriented angles and are interested in the implementation of their research findings by politicians and practitioners.

Some examples of these questions are: How are training systems steered? What interests, opportunities for influence and co-operation forms do the players have? How should we assess the quality, efficiency, costs and benefits of training? How should the contents of education and training be shaped in order to meet the demands of both the individual and the labour market? What consequences and challenges result from the imbalances between training and the labour market and from the future demographic, social and economic changes?

When seeking to answer them, it would be far too simple to talk only of 'unemployment', 'the labour market', 'knowledge' and 'flexibility' in general terms. Nor can we speak of 'training' in general but rather of diverse learning venues and forms which determine the acquisition of formal and non-formal knowledge and personal skills. In this context, the effects of structural change, the use of new technologies and media as well as the changing organisation of work are of central importance both for the nature and the transfer of information and for the forward-looking design of our training systems.

I would like to mention a few conclusions which emerge from the report. One of the most important tasks of politicians and company practice is to increase the attractiveness and quality of initial vocational training and continuing training. The performance and efficacy of education and training depend to a large degree on their organization and on the interaction and consensus between the players. They also depend on the players' mobility, flexibility and recognition in the employment system. Given the demographic changes, the trends towards decentralization and regionalization of responsibilities and dwindling budgets, both public and private in future, vocational training will have to do more to document the benefits it can offer the individual, company and society. In this respect, there will almost certainly be more intensive discussion about the distribution of training costs between individuals, companies and the State.

Another important aspect has to do with the gap between qualifications and job requirements. The early avoidance of unemployment and under-employment are also important tasks for the forward-looking design of training and the preparations for the unforeseeable requirements of new jobs and forms of employment. Far more importance should be attached to alternance training forms, versatile qualifications, ongoing continuing training, lifelong learning and the recognition of formal and non-formal competencies.

The challenges of the information society, the extension of the potential of human resources, the greater involvement of small and medium-sized enterprises and the dismantling of disadvantages are addressed, amongst other things, in the 5th Framework Programme which is currently being prepared by the European Commission. It envisages, more than was the case so far, the horizontal dovetailing of the programmes on the Community level.

The research report is intended for all political representatives, experts and decision makers in organizations, companies and public authorities, interested individuals - and last but not least - for researchers themselves who are called on to work more closely with politicians and practitioners. I very much hope that this will lead to a constructive and ongoing dialogue between all those concerned. The European Commission, like CEDEFOP, is ready to do what it can to support co-operation of this kind and so make an important contribution to European co-operation in vocational training.

Édith Cresson
Member of the Commission
responsible for Research, Innovation,
Education, Training and Youth

Executive Summary

Vocational education and training (VET) comprises all activities which provide people with the knowledge, skills and attitudes that are necessary and sufficient in order to perform a job or a set of jobs. However, the various EU Member States define vocational education, vocational training and continuing vocational training very differently, thus reflecting the variety of European education and training systems.

Regardless of these differences, it is widely acknowledged that education and training is important as a means of promoting the qualifications, skills and competencies of the individual, enhancing innovation, competitiveness and flexibility of firms, as well as welfare and equality in the society.

However, education and training alone are not expected to solve the crucial problems - in particular unemployment - of our societies in the shorter or even medium term. But they maintain a complementary role in improving the allocation of jobs and workers as well as in correcting market failures and structural imbalances on the labour market. In the longer run, there is no alternative to high-quality human resources for coping with structural change and securing growth and employment.

Education and training policies have to consider a set of complex relationships and interdependencies with almost all other social and economic areas. Therefore, consideration should be given to concepts and methodologies used in the various disciplines related to VET: sociology and political science, economics, education science and pedagogics, demographics, psychology and others.

Institutional and political background of VET systems in Europe

VET systems in Europe are shaped by different approaches to qualification standards and coherence within the whole system of education, training and work. This applies to the steering of VET systems, to the definition, design and regulation of training standards as well as to the relations between initial and continuing training and between training and the labour market.

Since a pure *steering of VET systems* by the market or by the State is not considered to regulate education and training efficiently, research has increasingly focused on the interactions between State and corporate policy-makers, in particular the social partners.

Of special importance are tendencies towards *decentralisation and regionalisation*, and the changing roles of the State, enterprises and social partners in steering training capacities and quality. The *performance of VET systems*, and in particular the flexibility and valuation of qualifications achieved, is highly dependent on the organisation, institutionalisation, industrial relations and funding arrangements. Research results indicate a significant advantage to a participatory form of organisation and regulation for VET systems, although in this field there are still significant research gaps.

Despite the substantial differences between VET systems in Europe, some *common principles* of steering arrangements are emerging which point to a certain convergence, in the sense of the transformation of proven principles in accordance with the national system. Some of those principles are the public responsibility for national VET standards on the one hand and decentralisation on the other, the involvement of social partners and regional authorities, and a tendency towards alternating forms of VET. Other principles are efforts to improve horizontal and vertical permeability and parity of esteem for theoretical and practical education and training.

Socio-economic framework of VET

For an analysis of the links between education, training and the labour market, it is useful to distinguish between manpower supply and demand, and the factors influencing both sides.

On the *supply side*, demography and participation in training and work are the main influences on the skill level, on the development of the workforce and on the shaping of VET systems.

As a consequence of the *ageing* of European populations, and in particular of the working-age population in the medium and longer term, an increasing number of older people may affect VET in different ways: because of a growing old-age dependency, there will be less scope for redistribution via public budgets. And changing age structures require VET systems to respond by focusing much more on the needs of older generations and to develop appropriate concepts to deploy and continually train older workers.

Another impact of ageing is the negative renewal balance between labour market inflows and outflows. There are fears - but practically no research results - that decreasing inflows of younger people with fresh skills may adversely affect innovation and the quality or productivity of work.

The second factor influencing manpower supply is *educational and labour market participation*. All EU countries have experienced a significant increase in the participation in education, training and work and an upskilling of their workforces. However, there are still substantial differences between countries, reflecting, among other things, capacity constraints and the fact that VET is sometimes unattractive as regards employment prospects.

This confirms that education and labour market participation - reflecting the behaviour of people - depends not least on expectations of labour market prospects and vocational career development opportunities.

Looking at the *demand side* and the factors influencing the number of available jobs and their skill requirements, the situation becomes rather complex and controversial.

In general, a considerable body of research confirms that skill requirements are increasing in the process of structural change, and poorly skilled workers have a diminishing chance of finding a stable and demanding job. Due to increasing selection processes, a high skill level seems more and more necessary, but at the same time less and less sufficient for employment and a career.

The main factors behind increasing skill needs are innovation, new technologies, the re-engineering of the business process and work organisation, the globalisation of economies and the structural shift towards the services and information sectors.

Research results generally agree, however, that the role of VET in creating additional jobs is limited in the short term. The net creation of jobs - an increase in employment with a reduction in unemployment - is, as many projections confirm, promising in the short and medium term only with a package of economic measures and strategies requiring the consensus of all actors in this field.

However, VET has a crucial role in matching the profile of the workforce to that of jobs, and thus in maintaining, ensuring and creating employment through improved productivity and competitiveness in the longer run. Therefore, the restructuring of economies, work organisations and new technologies requires an adequate response from VET systems.

There are contradictory developments concerning the links between skills and work. On the one hand, it is expected that more holistic, self-reliant working and greater responsibilities for workers will require broad, transferable and flexible skills.

On the other hand, there are increasing risks at work, for example displacement and job insecurity. These are closely connected, firstly with the adaptability and flexibility of firms in different countries and with their strategies to recruit workers from internal or external labour markets and secondly, with the nature of skills and qualifications, in particular their potential flexibility and transferability to different work situations and jobs.

In this context, the question of the *costs and benefits* of education and training comes into play, on the macroeconomic as well as on the individual and enterprise level. Although some reservations must be made, research confirms on the whole the positive link between skills and long-term economic growth and/or individual earnings. The situation on the enterprise level is less clear, although research results indicate that there is also a close correlation between skills and productivity.

Supply and demand are matched on the *labour market*. Imbalances or "skill gaps" on the labour market can be identified in various ways: quantitatively (e.g. unemployment, shortages), qualitatively (e.g. under/over-education) or as precarious jobs.

Most worrying is the high and persistent level of *unemployment*, in particular youth and long-term unemployment. However, the strong correlation between higher levels of education and training and lower unemployment risks in most countries is impressive. To an increasing degree, lower skilled people and those whose skills have been rendered obsolete by the process of economic and technological change are affected by long-term unemployment.

Qualitative mismatches on the labour market are less clear. Although there is increasing research devoted to *"over or under-education"* or inappropriate employment in various countries, the results are controversial. This is partly due to different approaches and data bases - but also reflects the complexity of these phenomena. Much more research work in this field appears necessary. The same applies to "non-typical" or precarious employment.

Scenarios and long-term *forecasts* carried out in several EU countries show - despite different concepts and approaches - that the demand for high skilled occupations and higher qualifications is expected to increase further. This corresponds to a dramatic decline in the job prospects of lower skilled workers. However, significant replacement effects are expected, resulting in an increasing deployment of workers with intermediate skills to jobs formerly held by unskilled workers, and of highly qualified persons to jobs on intermediate levels. These processes of mobility and substitution and of interactions between supply and demand have not yet sufficiently been treated by forecasting research.

Choice, transitions, continuing training and disadvantaged persons

Shifting from the more macroeconomic and sectoral view to individuals, research on the *vocational choice* of young people confirms that individual decisions are not made at a fixed date but are a result of a long-term process influenced by individual and institutional patterns, the social environment, economic factors and the labour market. Numerous approaches, based on human capital as well as on sociological and psychological theories, try to explain individual decision-making.

The complex and interwoven processes of vocational choice must be considered in an appropriate way by *vocational guidance*, in terms of guidance concepts, the qualification of advisors and the type of information to be provided. Important tasks of vocational guidance involve the activation of the demand for information and the further development of targeted information supply.

Out of various alternative training concepts, *apprenticeship or alternate training* is considered to have many advantages from a pedagogical as well as from a labour market viewpoint. Incorporating a real working situation into the learning process is seen as a bridge between school and working life, thus smoothing the transition from school to work. However, it has been confirmed for several countries that apprenticeship training is not always future-oriented: apprentices are often trained in sectors and occupations with below average growth and are rarer in the expanding and innovative sectors.

The scope of research devoted to *transitions* between education/training and the labour market is almost immeasurable. A number of concepts and theoretical explanations have been developed for the fact that young people are increasingly facing unemployment, inappropriate employment and precarious jobs

- although they are on average better educated and trained than preceding generations,
- and despite substantial policy measures and funds devoted to alleviate the transition process.

Economic theories to explain the transition process examine the link between training decisions and cost-benefit considerations, using, among other things, job search and job rationing models. Sociological theories view transition as a socially constructed and organised process with a variety of actors and institutions involved and their particular interests.

Both economic and sociological theories attribute a key role to the labour market and the conditions prevailing there when it comes to shaping the transition process. And a series of analytical methods and information systems (e.g. longitudinal and cohort surveys, panel enquiries, life biographies) have been developed to clarify the scale and underlying factors of the transition process.

The subject of transition research becomes increasingly unclear, however. A fundamental question is whether the problems of the transition and integration of youth into work should be viewed against the backdrop of increasing instability and the destructuring of what have so far been standardised life patterns, affecting not only young people but also, to an increasing degree, older ones.

For an explanation of different transition patterns from a cross-cultural view-point, several types of the organisation of transitions are distinguished. Thus, concepts of "organisational and qualificational spaces" analyse the specificity of skill contents, the degree of standardisation of training provisions and certificates and the degree of stratification of education and training routes.

Due to the changes in the socio-economic, demographic and technological environment and the ever faster rate of which skills become obsolete in this process, the improvement of *continuing vocational training* (CVT) and of *lifelong learning* is of growing concern. Related policies aim at reducing the negative impacts of unemployment by strengthening the approaches of second chance, compensatory CVT, Open Distance Learning, and at promoting CVT in order to maintain both personal self-fulfilment and economic competitiveness.

The analysis of CVT-promotion in Europe illustrates that there are common efforts but no substantial impacts. One of the most crucial problems is the lack of funding and firms' cuts in spending on VET and CVT in an economic crisis situation. Another problem - although the situation is improving slightly - is the lack of transparency of CVT measures, particularly as regards their effectiveness and efficiency.

Unemployment problems and difficulties in finding and keeping a job affect certain social groups considerably more than others. This applies in particular to immigrants and ethnic minorities, disabled persons, those re-entering the labour market, the low-skilled, early school-leavers and drop-outs, benefit claimants, older job-applicants, etc. Although not comprehensive, this list shows that the issue of *disadvantaged groups* cannot be simply limited to a single dimension.

Analyses of the participation patterns in labour-market programmes, including vocational training, reveal an under-representation of the disadvantaged groups. There are legal, administrative and institutional barriers which rule certain underprivileged groups out of the programmes, either a priori or de facto. Further explanations can be sought among the disadvantaged themselves: lack of motivation, fear of failure, negative school experience and material or financial thresholds. Last but not least, the programmes may not always be adapted to the needs and aspirations of the majority of weaker groups.

Research literature identifies several elements concerning the form and content of training measures for the disadvantaged which could help improve their effectiveness. In conclusion, measures should take into account the capabilities and needs of the target groups as well as job requirements, the criteria being prevention, access to programmes, contents and duration of measures.

The problems relating to disadvantaged people are set against the backdrop of a dramatic reduction in the demand for lower skilled workers, and of replacement by higher skilled ones. Therefore, every effort should be made to develop an instrument for identifying job opportunities for disadvantaged groups in specific market segments. Several other issues such as quality control, cooperation with social partners and public employment services are closely linked to this issue.

Curricula, learning formats and non-formal learning

This section - although not yet complete in this report - is to present the underlying theories and approaches in the domain of curriculum development, the design of innovative teaching and learning arrangements and the identification and assessment of non-formal learning.

Key qualifications - "a tool to survive in a more and more complex world, and at the same time, a strategy for innovation and social change" - can be defined, among other things, as vocational, methodological, social and participatory competencies.

National debates on key qualifications concern "atomistic" approaches focusing on individual learners and the assessment of outcomes; competencies related to organisational learning and co-operative teaching-learning arrangements; and "holistic models" of curriculum development based on integrative learning and the conversion of existing curricula into innovative learning environments.

Concerning the responsiveness of VET, research reflects a clear, rational and deliberate effort to design curricula for occupational flexibility and not only to react to, but to prevent mismatches in labour markets. VET reforms concerning time and content, the learning environment, and in particular the use of new information technologies in training and education are seen as the predominant reactions of contemporary VET systems to the pressures of the labour market.

The discussion on *new learning formats and venues* is ranked among several aspects concerning the role of new technologies in the process of learning and training.

New media are independent of particular learning venues or time. They are able to present complex authentic situations in a realistic way and from a number of different perspectives and thus foster interest in the subject, flexible thinking as well as usable knowledge. However, an explicit relation between new media and learning results is not empirically verifiable.

The shift from 'old' to 'new' media goes hand-in-hand with a continuous transition from instructional to constructivistic learning-teaching concepts, and to self-directed learning where knowledge is individually constructed in the learner's problem-solving process. It remains an open question, however, whether face-to-face interactions can ever be replaced by 'parasocial interactions' through the new media.

Readiness for self-directed, self-organised and open learning can be furthered by experiencing autonomy, competence and social integration. Means to further the capacity for self-directed learning are appropriate learning environments and strategy training, and in particular a "cognitive apprenticeship strategy".

The potential of the new media, among other things, has increasingly focused attention on *non-formal learning* inside and outside the workplace. An assessment of non-formal learning is important: for individuals, in order to ease their entry into training and improve their labour market eligibility; for enterprises, in order to identify their human-resource potential; and for societies, to facilitate the transfer of skills between different spheres and improve the allocation of human resources.

The diversity of approaches to assessing non-formal learning reflects the complexity of the processes involved and in particular different conceptions of "knowledge". Common to French, British, Dutch and other approaches is an orientation towards guided processes, using dialogue as an inherent element in the assessment process. These approaches refer to subjectivistic, context-bound conceptions of knowledge and learning. Other approaches (e.g. "Personal Skill Cards") are more focused on the assessment of objective and verifiable knowledge.

In order to improve the methods of assessing non-formal learning, several concepts relating to their validity and reliability have been developed. Examples are concepts of "learning as a situated practice", the "skill-stage approach" or the concept of "learning as reproduction and as transformation".

However, the assessment and acceptance of non-formal learning is not only a question of its legal status, but also of its social legitimacy and thus of commonly agreed basic objectives and standards. The role of the State should be a careful orchestrating of different groups and interests through a consensual design. These and other aspect of legitimation have so far received too little attention in research.

Comparison, mobility and recognition of skills

The *selection, comparison and interpretation* of statistical data and categories for different countries often neglect norms, values and structures embedded in the cultural and historical background of the countries to be compared. Any comparison of specific VET systems and labour markets requires a prior understanding of the specific historic, cultural and socio-economic interrelations. Thus, the methodology of comparative research is rooted in two main approaches: hermeneutic contextualisation and empirical analysis.

The hermeneutic approach aims at "understanding" and at a history-based perception of reality and ideas. It is complemented by the phenomenological approach, which focuses on an holistic interpretation of life situations in different societies.

The analytical-empirical approach - still dominant in VET comparisons - aims at "explaining" quantitative facts, interrelations and trends. The progress of quantitative methodologies has been recently complemented by the testing of qualitative methods applied, for example, in ethnographic surveys and case studies.

Both approaches - hermeneutic and empirical - have been reconciled in so far as widespread acknowledgement of their legitimacy was reached. New comparative methods combine historical interpretation, functional analysis, quantitative data processing and interpretation.

Discussing *transnational mobility* starts by looking at the mobility of *workers* in Europe.

The number of EU citizens working in another Member State is not very impressive. In 1995, out of the 148 million people in the entire EU labour force, only 2% of those born in the EU work and live in another Member State. Their level of education corresponds more or less to those of residents, but is on average higher than that of non-EU migrants.

Several research studies try to explain why only few workers have used the possibility of looking for a job inside the EU. For example, structural funds by and large may have reduced the "prosperity gap", thus also preventing the push-pull factors of traditional migration theory from coming into play. Other determinants of low mobility are cultural and linguistic barriers, insufficient recognition of qualifications and high unemployment in all Member States.

There seems to be no reason to expect any large scale labour force movements between the Member States in the future. But there are some areas where a limited increase in transnational mobility is likely. One is linked to the globalisation and internationalisation of companies and their seconding of staff to subsidiaries in other countries. Another trend concerns the "Euro-regions" (border regions) with an increase in frontier work.

Another form of mobility is *transnational exchange in VET*, an activity that primarily takes place within EU or national programmes. It aims at enhancing vocational skills, developing transversal skills and intercultural awareness, improving foreign language skills, stimulating transnational mobility and thus promoting young people's future prospects.

Unfortunately, with only few exceptions, many of these activities have never been properly evaluated by research. Looking into individual placement reports there are, however, examples where the transfer of technology and know-how constitutes a major motivating factor. This relates to the improvement of foreign language competency in specific work fields and of knowledge of procedures and legal and administrative issues in the host country.

Studies on transnational mobility in VET should combine several disciplines and focus on different aspects: the situation and background of the individual participants, the situation of the host-firm, and the general social, economic, political and cultural background of the host country. However, little evaluation research work is available in these fields, thus demonstrating that transnational mobility has not yet been established as a proper field for research.

Recognition and transparency of skills are regarded as important issues to alleviate mobility across the borders and to achieve equality of opportunities. Since the European Commission has no right of legislative initiative in the field of VET policy but is restricted to collaboration with the Member States, the elaboration of a common framework for qualifications and occupational profiles - started in the eighties - has shifted its focus. Less emphasis is being placed on mutual recognition of certificates and more on the "validation of the *acquis*" and the accreditation of prior or non-formal learning.

It must be left open whether and how the development of a common framework for the recognition of qualifications and occupational profiles can be promoted in the future. Questions of voluntariness, the participation of the social partners and the criteria and procedures of a common framework have to be answered. Work in this direction has started, focusing on individual portfolios, the network of qualification data-banks and the setting up of reference centres on information about and the assessment of foreign qualifications at national or even regional level.

By science, not certainty but uncertainty is raised - in just tolerable limits.
(Niklas Luhmann: Die Wissenschaft der Gesellschaft)

Science indeed was the perfect bridge between rationality and mastery:
it was the application of reason to the understanding of
natural and human phenomena; and it made possible
a more effective response to the natural and human environment.
(David S. Landes: The Unbound Prometheus)

Introduction

The reporting series on European research in Vocational Education and Training (VET) starts with this pilot issue and will be published by CEDEFOP biannually. The reports should give a comprehensive overview of the state of the art of VET research in Europe, the main theoretical and conceptual approaches, empirical findings and implications for decision-makers.

Given the very short time available on the one hand and the wealth of research material in Europe on the other it was impossible to cover all aspects in this publication. Therefore, the report has to be updated regularly as well as complemented by new topics which have not been addressed here sufficiently or which may emerge in the course of time.

Definition and role of vocational education and training

Broadly defined, vocational education and training (VET) comprise all more or less organised or structured activities - whether or not they lead to a recognised qualification - which aim to provide people with knowledge, skills and attitudes that are necessary and sufficient in order to exercise a job or a set of jobs. Trainees in initial or continuing VET thus undertake work preparation or adapt skills to changing requirements.

VET is independent of its venue, of the age or of other characteristics of participants, and of their previous level of qualification. The contents of VET could be job-specific, directed to a broader range of jobs or a mixture of both; they can also include general education elements (see the judgement of the European Court of Justice in Case 293/83).

The definition of VET and continuing vocational training (CVT) in individual countries is rather different, however. The *box* illustrates original definitions of vocational training, vocational education and CVT taking Germany, France, Spain, Italy and the United Kingdom as examples.[1]

The major importance of vocational education and training for the individual, for enterprises and for society as a whole is widely acknowledged.

For the *individual*, skilled work is one of the most important means of social participation and recognition, personal identity and self-consciousness - and, of course, for making a living. VET, in providing those skills suited to individual abilities and aspirations[2] and making people employable, plays a major role in giving access to those jobs and thus in offering career and life opportunities.

Enterprises, in particular when restructuring their business processes and work organisations with an eye to global and increasingly competitive markets, are highly dependent on skilled staff. This is confirmed by the trend towards modern production processes and team working, which both require employees to have a high degree of responsibility and skill.

And for *society*, a high skill level among the population and workforce - which mainly depends on the skills, knowledge and qualifications generated by its education and training system - is an important means of enhancing competitiveness, growth and employ-

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[1] Other countries cf. CEDEFOP 1996b (Glossarium Vocational Training)

[2] Other functions of education and training discussed are, for example: enhancement of cultural, social and democratic participation; selection and distribution of social positions and chances; generating human capital as a production factor according to economic demand; "consumption" character of education; training as a "depository" in view of unemployment or as a means to improve individual competitiveness.

Selection of national definitions of vocational training, vocational education and continuing vocational training in D, E, F, I and the UK

D	E	F	I	UK
Berufsausbildung: berufliche Ausbildung Umfaßt jede Form der Ausbildung, die auf eine Qualifikation für einen bestimmten Beruf oder eine bestimmte Beschäftigung vorbereitet oder die die Befähigung zur Ausübung eines solchen Berufes oder einer solchen Beschäftigung verleiht, unabhängig vom Alter und vom Ausbildungsniveau der Schüler und Studenten und selbst dann, wenn der Lehrplan auch allgemeinbildenden Unterricht enthält.	**Enseñanza profesional** Toda forma de enseñanza profesional que proporciona las competencias y conocimientos necesarios para ejercer una profesión, ocupación o empleo, independientemente de la edad y del nivel de formación de los alumnos o estudiantes y de quel el programa de enseñanza incluya une parte de cultura general. Se distingue en España la formación profesional reglada, dependiente del Ministerio de Educación y Ciencia, y la formación profesional ocupacional que corresponde al de Trabajo y Seguridad Social. La primera es parte integrante del sistema educativo y se dirige a los alumnos que han terminado la escolaridad obligaroria (hoy día está afectada por la reforma de la educación técnico-profesional que, de manera global, entrará en vigor próximamente). La segunda, dirigida a los adultos en edad laboral, constituye un apoyo a la incorporación al mundo del trabajo y a la movilidad ocupacional de los trabajadores.	**Enseignement professionnel** Toute forme d'enseignement qui prépare à une qualification pour une profession, métier ou emploi spécifique, ou qui confère l'aptitude particulière à exercer une telle profession, métier ou emploi, quels que soient l'âge et le niveau de formation des élèves ou des étudiants, et même si le programme d'enseignement inclut une partie d'éducation générale.	**Istruzione professionale** Istruzione impartita dal Ministero della pubblica istruzione, successiva alla scuola dell'obbligo e destinata a fornire une preparazione professionale di base ed una preparazione specifica per consentire l'esercizio di una attivatà lavorativa. Il primo triennio di tale istruzione porta alla maturità tecnica che consente l'esercizio di una attivatà esecutiva. La successiva prosecuzione degli studi consente l'attenimento della maturità professionale valida per l'accesso agli studi universitari o ad attivatà lavorative a livello impiegatizio.	**Vocational education** Education, the objective of which is to prepare the student/pupil for a particular vocation or type of vocation and the content of which is planned or designed to achieve that purpose.
Berufsbildung: berufliche Bildung Umfaßt alle organisierten und institutionalisierten Lernprozesse, unabhängig vom Alter und vom Niveau der Lernenden, die zu bestimmten als Erwerbschance verwertbaren Qualifikationen oder Zertifikaten führen. Zur Berufsbildung zählen die Berufsausbildung und die berufliche Weiterbildung, die die berufliche Fortbildung und die berufliche Umschulung umfaßt.	**Formación profesional** En un sentido amplio, conjunto de conocimientos, habilidades y actitudes que posibilitan el desarrollo o desempeño de las profesiones. Incluye, por tanto, la formación general de base, las distintas modalidades de la formación inicial y la formación continua en cualquiera de sus formulas o manifestaciones. En un sentido más restringido, se circonscribe a enseñanzas de carácter básico e inicial. La utilización del término en español debe tener en cuenta el contexto. Lo normal es que se identifique con formación profesional reglada o con formación profesional especifica, a pesar de que legalmente (LOGSE, art. 30) tiene el sentido amploi descrito arriba. Formación profesional reglada y formación profesional especifica son términos legales, teniendo el primero un contenido más amplio al incluir también la formación profesional de base.	**Formation professionnelle** Désigne tous les types de formation systématique organisée, dispensés indépendamment de l'âge et du niveau personnel, à des candidats à l'exercice futur d'une activité professionnelle, et permettant d'acquérir les qualifications pratiques et théoriques nécessaires à l'exercice de cette activité.	**Formazione professionale** Sistema di interventi formativi finalizzati all'acquisizione delle conoscenze teoriche e pratiche necessarie per svolgere ruoli professionali, e rivolti al primo inserimento, alla qualificazione, alla riqualificazione, alla specializzazione, all'aggiornamento e al perfezionamento dei cittadini. Tali interventi sono promossi dalle Regioni che li attuano in gestione diretta o convenzionata tramite "accordi" con enti o organizzazioni privati di formazione.	**Vocational training** Activity or programme of activities designed to teach the skills and knowledge required for particular kinds of work. Training (Department of Employment) usually takes place at work places, whereas education (Department of Education and Science) takes place at educational establishments. Education and training terminology is not rigidly defined within the United Kingdom legal framework. The meaning of the terms used in this field is a result of general usage, without having any fixed legal or statutory basis, except in the case of designations awarded by chartered or statutory professional bodies.
Berufliche Weiterbildung Umfaßt alle organisierten und institutionalisierten Lernprozesse, die darauf abzielen, berufliche Kenntnisse und Fertigkeiten zu erhalten oder zu erweitern sowie den beruflichen Aufstieg oder den Übergang in eine andere berufliche Tätigkeit zu ermöglichen. Umfaßt die berufliche Fortbildung und die berufliche Umschulung.	**Formación profesional contiua; formación continua** Término utilizado en sentido amplio para referirse a las actividades formativas que se programan y desarrollan en orden a la actualización de conocimientos de quienes ejercen una profesión o tienen una ocupación. Permiten la adaptación de las personas al cambio de las técnicas y de las condiciones de trabajo y hacen posible su promoción profesional o el cambio a otra actividad. El término legal es formación profesional ocupacional; sin embargo, este término suele circunscribirse a las actuaciones formativas en favor de las personas paradas, mientras que el término formación profesional continua o formación continua se utiliza más como equivalente a las actuaciones formativas de los trabajadores ocupados.	**Formation professionnelle continue** Elle a pour objet de permettre l'adaptation des personnes disponibles sur le marché du travail au changement des techniques et des conditions de travail, de favoriser la promotion sociale par l'accès aux différents niveaux de la culture et de la qualification professionnelle, ainsi que de promouvoir leur contribution au développement culturel, économique et social.	**Formazione professionale continua** Attivatà rivolte prevalentemente agli occupati che permettono l'acquisizione di nuovo abilità relative al tipo di lavore svolto o la comprensione del più ampio contesto sociale nel quale esercitano la loro attivatà lavorativa. *Termine poco usato.*	**1. Continuing vocational training** Vocational training supplementary to initial training which is part of an ongoing process designed to ensure that a person's knowledge and skills are related to the requirements of his/her job and are continuously updated accordingly. It does not include re-training. The word "continuing" implies that some training has already taken place, therefore starting a first or a new training does not come under continuing vocational training. The term is not usually employed in the British context. **2. Adult vocational training** Initial training designed for people without any previous vocational training.

Source: CEDEFOP (1996b) Glossarium Vocational Training, 1st ed., Thessaloniki ment, achieving equal opportunities and preparing for future challenges.

The prominent role of education and training has been emphasised above all by the European Council in almost all its meetings in recent years, by the European Commission (cf., for example, 1993a, 1995a, 1996a, 1997a), as well as by various high-level resolutions, e.g. the World Bank's Policy Paper (1991) - not to mention innumerable national policy statements in all Member States.

Interrelationships and interactions

However, and this should also be stressed, education and training alone are not expected to solve the crucial problems in our societies in the short term, in particular unemployment and risks of social exclusion. But they can play a complementary role in improving the allocation of jobs and workers as well as in correcting market failures by supporting the integration of young or disadvantaged people in the labour market.

European and other industrialized countries are characterised by a high degree of complexity and interconnection in all social and economic spheres, by increasing openness and uncertainty, and by a dynamism with numerous associated problems.

Education and training, as an integral part of the socio-economic system, are influenced by these changes and in turn exert an influence on them. The *box* illustrates some horizontal and vertical interrelations in a condensed form which, of course, neither claim to be complete nor to imply a causal direction in all cases.

Function and objectives of VET research

Education and training policies, as well as other policies, have to consider these complex relationships. It is the task of *research* to shed light on these aspects in order (1) to analyse, identify and explain these effects and to warn against actions which do not take into account other areas and which thus may have undesired effects; (2) to reduce complexity and thus to improve our understanding of causes and effects; (3) to identify the means and strategies which are expected to be most effective and acceptable in solving a problem.

In particular, research in VET aims to:

❑ describe and explain the conditions for and the structures and processes involved in acquiring and updating vocational skills;

❑ provide information on the interactions between VET and other areas of social action. Those interactions concern the legal and institutional framework, interdependencies with social, economic, technological and demographic change and the behaviour of the different actors in this field;

❑ and thus to demonstrate its relevance to the option-seeking and decision-making of the various social protagonists.

One of the most important focuses of current research is the link between VET and work, with numerous factors at play on both sides. These factors influence not only the design of VET and the behaviour of actors, but also the social acceptance and legitimisation of VET. Other particularly important elements needed for ensuring a modern vocational training system are the updating of existing concepts and the testing of new ones. Research is called for here to identify new requirements and their implications for innovation and development.

Transparency and research cooperation

The theories, methods and findings of VET research and, similarly, the innovations and reforms introduced in practice are often not sufficiently perceived - this being especially true of activities taking place outside one's own country. This is due partly to the diversity of VET systems within Europe, which impedes the understanding of national differences.

Further problems are shortages of interdisciplinary or multidisciplinary research and, in some cases, inadequate cooperation among researchers and research institutions themselves and, in addition, a lack of co-operation and feedback between research on the one hand and policy and practice on the other. What should also be mentioned is the lack of transparency concerning research projects and findings which results from a fragmentation of VET research being done by universities, state-run research agencies and private research institutions.

On the other hand, an increasing number of networks in research cooperation are spreading throughout Europe (cf. also the Annex), boosted in recent years

Interrelations of vocational education and training with other socio-economic spheres*

of influence on influenced by	**vocational education and training (VET)**	**institutions, legal basis, policy**	**demography**	**social system**	**economy**	**employment, labour market**	**technology, work organisation**
VET (access, outcomes, funding, venues, content, quality, etc.)		efficiency/quality of administration, management, etc. also depend on skills of employees	effects on fertility, family size; in the longer run on age structure, on cohorts entering VET, etc.	allocation, selection, placement, mobility; democratisation, equality of chances, individualisation	impacts on individual/social costs and benefits, on growth, productivity, flexibility, etc.	employment effects via growth; allocation of labour; impacts on unemployment, career, etc.	impact on inventories, innovation, productivity, ability to cope with new technologies and work organisation
institutions, legal basis, policy (laws, regulations, planning, organisation, legitimacy, etc.)	influence on: order, design, organisation of VET; standards, recognition, permeability, planning, information, guidance, etc.		effects on family planning/births, e.g. by financial aids, information; impact on migration and mobility	influence on social structure, life chances, stratification, pluralism, élite formation	effects of regulation/deregulation on markets, investments, etc.; impacts on labour costs, prevention of market failures	security of employment; employment programmes, measures for labour-market integration	effect on innovation, dissemination and acceptance of new technologies; promotion of R&D; control, technology assessment
demography (births, age structure, retirement, gender, migration, etc.)	scope of individual demand for VET, of new labour supply, replacement demand for graduates, etc.	measures for older/younger workers; effects on social insurance, migration control		age structure and migration may influence social structure	effects of population's age structure on final demand for goods, services, real estate	impacts on number/structure of labour force potential; ageing, replacement demand; migration, etc.	indirectly, e.g. acceptance of new technologies, capital/labour substitution also depend on age/gender
social system (social origin, status, strata, situation, social structure)	access to higher education routes, education and training success, training allowances, support by family	measures to correct market failures, social policy, distribution of power	social status may influence births, retirement, migration		scope of redistribution, transfers, social budgets	effects on labour force participation; employment and unemployment structures, working time and part time jobs	unequal access to new technologies (e.g. in youth), possible connection with social status? unequal access for males and females
economy (investments, growth, productivity, human capital, costs/benefits, etc.)	effects on training offers, VET funding; demand for skilled/flexible workers; changing job requirements	needs for regulation and control of markets, prevention of market failures, etc.	effects on births, retirements, migration	impact on income distribution, polarisation, life chances; formation of blue and white-collar workers, of self-employed, service classes		labour demand by skills, occupations etc.; skill utilisation; emergence of new jobs/occupations; effects on earnings, etc.	need for new technologies/restructuring of work organisation to improve production efficiency, flexibility, competitiveness
employment, labour market (level/structure of employment, job types, unemployment and appropriate employment, shortages, etc.)	job requirements affect adaptation of VET/CVT in design, contents, structure; training measures for unemployed, etc.	need for regulations/policies on unemployment; integration of disadvantaged; primary/secondary labour market	effects on births/retirement/migration via family income, labour market situation	influence on positions in firms and society, on unemployment, career opportunities, gender inequality concerning income, career, job content	effects of labour supply on earnings, substitution; of skill structure on productivity; of unemployment on labour costs, etc.		effects on R&D and diffusion of technologies; realisation of new work organisation also depends on available skills, etc.
technology, work organisation (innovation, quality of products, efficiency, work division, etc.)	obsolescence of skills by new technologies; need for skill adaptation/transfer; new technologies in VET, role of key qualifications, etc.	new technologies enable efficient control, planning, improved information and administrative efficiency	at most long-term effects (e.g. of biotechnology, genetic engineering); relations between new technologies, workplaces, births?	formation of a "technological élite", social exclusion of people without access to new technologies?	impacts on productivity, efficiency, competitiveness; rationalisation; energy saving, environmental protection, quality of products	change in skill needs; adaptation and obsolescence of skills; new occupations, work tasks, responsibilities, flat hierarchies, etc.	

* The diagram does not claim to give a systematic structuring. It contains only a list of keywords. Indirect effects are not considered (e.g. institutions -> regulation -> labour market -> provision of skills by initial or further training schemes) as well as dynamic processes (e.g. the influences on the transition process into VET or into the labour market).

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by the new means of electronic cooperation. It is not yet clear, however, whether research transparency will increase in line with the growing number of networks.

European Report on VET research in Europe

The series on VET research in Europe to be published by CEDEFOP biannually, of which this is the first, should make a contribution towards improving transparency in VET research matters in Europe, pooling the findings of different research disciplines, and at the same time properly positioning other fields of social action in terms of their relation to initial and continuing vocational training. In so doing the report must always point out the implications for the various protagonists concerned - politicians, institutions, social partners, enterprises, individuals - and draw attention to areas where research coverage is too thin and needs building up.

As this report is a research report, it also seemed necessary to discuss the most important underlying theories, concepts and approaches. Without knowledge and understanding of them, it is difficult to interpret specific results.

Simplistic explanations are always suspected of serving interests, hiding realities or being out of date. The reader may also consider that simple questions often require complex answers. This does not necessarily mean that science and research should produce uncertainty - but they have to point out that in our world nothing is "certain", everything is ultimately dependent on the non-predictability of human behaviour, actions and reactions.

Finally, the report should also contribute towards improving cooperation and communication both within the research community on the one hand and between researchers and policy-makers and practitioners on the other.[3]

The first European report on research and development in VET has a pilot character since so far there are almost no similar publications covering European VET research in a comprehensive way. The synthesis report which you have before you is based on a number of contributions by researchers in various disciplines of VET research and by own additional surveys.

In view of the vast wealth of research material not only on European aspects, but also, to a greater degree, on national ones, it was impossible to cover them all in this publication. Moreover, much important research work may have been overlooked or treated too briefly.

The report will subsequently be subject to revision involving both upsizing and downsizing. Such adaptations must be expected because of the diversity of training systems and training problems in Europe, the dynamics of vocational training development and VET research, and the changing social, economic and technological conditions with which these dynamics are so closely associated.

Therefore, the report must be updated regularly and supplemented with new topics which have not been addressed here sufficiently or which emerge in the course of time. Critical comments, references to relevant research work and suggestions for further topics are most welcome.[4]

> **CEDEFOP would like to thank all those who have contributed to this report - whether by preparing a contribution, offering constructive comments and support, or by their hard work in editing this document, without which it would not have been possible to publish this report in its present form.**

Contents of the VET Report

The interdependencies and interactions between VET and other socio-economic areas, as mentioned above, operate at all levels: at the macro level, the meso level (e.g. sectors, regions) and the micro level (companies, individuals). Furthermore, it seems essential for consideration to be given to the research approaches and methodologies used in the various disciplines related to VET (e.g. sociology, political science, economics, pedagogics, psychology, demographics) and their sub-disciplines.

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3) For further information on European co-operation in education and research cf. BMBF 1997

4) Contact: Manfred Tessaring, CEDEFOP, P.O.B. 27 (Finikas), GR-55102 Thessaloniki, tel.: +30-31-490 151, fax: +30-31-490 174, e-mail: mt@cedefop.gr

The research report consists on two publications:

- ❑ the synthesis report which you have before you; and
- ❑ the background report which contains the original contributions and will be published separately by CEDEFOP.

The synthesis report is structured as follows:

Part One deals with the statutory, institutional and political background to VET, the steering of VET systems and the funding arrangements in Europe. The analysis is partly restricted to France, Germany and the UK - three countries that are said to serve as examples of the whole range of VET organisation in Europe. Part One is completed by a discussion concerning the performance of VET systems and the European context.

Part Two presents research work related to the socio-economic frame of VET. A first chapter discusses demographic developments and changes to the supply side. The demand side is the subject of the second chapter and describes changes in the technological and organisational framework of economies and their impact on skills. A third chapter is devoted to the macro and microeconomic costs and benefits of VET. Supply and demand converge in the labour market; chapter four gives an overview of labour-market structures, unemployment and inappropriate employment. Finally, a fifth chapter summarises research dealing with ways of increasing employment by creating new jobs and with future trends in work and skills.

Part Three deals with the training process and the various problems and groups of persons involved. After starting with an analysis of individual education and training decisions and the implications for vocational guidance, a second chapter discusses the correlation of structural change with apprenticeship training. A third chapter focuses on the problems of transition from VET to the labour-market and different forms of the organisation of this process in Europe. The objectives and actual situation of continuing vocational training are subject of the fourth chapter. Finally, problems of disadvantaged groups in training and work are addressed in a fifth chapter.

Part Four is devoted to the content of VET and the process of learning and training. After a discussion of proposals on how to proceed with curricular research and of the role of key qualifications, a second chapter deals with new learning formats and venues using new technologies. Finally, a third chapter discusses the forms, identification and social acceptance of non-formal learning.

The transnational aspects in *Part Five* start with a discussion of the principles, methods and limitations of comparative VET research. European mobility is the subject of the second and third chapter. A fourth chapter describes past developments and future needs of the recognition and transparency of skills and qualifications.

General conclusions on the whole report are given in *Part Six*.

The *Annex* gives brief information on VET research institutions, selected networks for research co-operation, on sources for the description of VET systems in Europe, on EU-programmes related to VET and on international statistics and classifications.

Part One

Institutional and Political Background of VET Systems in Europe

Vocational education and training is embedded in a country's legal, social, economic and political order and is shaped by legislation, regulations and the influence of institutions and politics. Although the degree to which VET is regulated differs from one country to another, in all countries statutory instruments, institutions and politics play an essential role in steering and reforming VET.

An analysis of the institutional structures of VET systems and of the interactions between decision-makers on the macro-level, mediators such as federations and unions (meso-level), and training institutions and individuals on the micro-level requires insight into the internal and external mechanisms and regulations which govern the systems and processes of vocational training.

This part is intended to present an outline of the institutional and organisational foundations of VET in some Member States, of the statutes relating to VET, e.g. allocation of competencies, steering and contractual arrangements, provision of training places and funding arrangements. Other aspects are the co-ordination, control and planning mechanisms and the possibilities which institutions and social groupings (e.g. the social partners, the State) have of influencing the organisation, funding, development and modernisation of VET, including the assessment of the performance of VET systems in the European context.

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1 Typologies of VET systems[1]

1.1 Steering by the market or the State?

In the discussion on the roles of the market and the State as the principal steering institutions of VET systems, two basic positions can be distinguished:

- Advocates in the tradition of neo-classic economies argue in favour of the *market* as the most efficient form of steering, including for VET, and thus call for deregulation, an orientation towards economic demand and competition between training institutions.
  The role of the State is to guarantee the functioning of the VET system by regulating only the definition, assessment and recognition of qualifications, and by controlling the quality and cost-effectiveness of training institutions (OECD 1991). Some authors in principle even doubt that a State-run education system (especially a VET system) is compatible with social and economic order (cf. for example: Woll 1988).

- Advocates of the dominant role of the *State* argue that education and training are public goods and thus are due to systematic market failures. They argue in favour of complementary State intervention and institutional arrangements necessary to prevent distortions and disequilibria (Finegold/Soskice 1988, 1992; Soskice 1993; Marsden 1995).

One of the basic questions behind these positions is whether education and training are private or public goods. This question has been subject to wide and historical discussion which should not be extended here. Some criteria should be mentioned in order to determine whether a "good" (like vocational training) has a "public" or "private" character:

- the existence of internal, external and spill-over effects of training;
- the relations of individual and social costs of and returns to vocational training;
- the question of perfect transparency (also ex-ante) and mobility;
- homogeneity of persons/skills and jobs;
- immediate adaptation of VET as well as the labour market to changes.

1.2 Contractual arrangements

Recent discussion on this topic stresses that neither the market nor the State alone is able to steer education and training efficiently. Open societies which lack official ideologies try to organise conflicting interests and to contract regulations based on a consensus between the main actors in this field. Since neither of the two theoretical models "market vs. State" reflects the complex processes of VET steering in one country or takes account of differences between countries, research has increasingly focused on the steering function of intermediaries and on interaction with the State and corporatistic policies.

> The international policy debate on VET steering can be summarised as follows: "The main dividing line … has been drawn between those who favour voluntarism and those who favour various collective arrangements. Voluntarism implies that decisions on training should lie exclusively with the individual company concerned. Collective arrangements imply that companies are either obliged to take part in training or contribute to the costs of training for the whole workforce. These obligations can either be enforced by law or by arrangements between the social partners."
> (Skinningsrud 1995a, p. 74)[2]

However, this statement is less applicable to school-based VET systems. Furthermore, both the State and the social partners in most Member States receive support from numerous national, regional or local institutions which to some extent have interests of their own.

1.3 Main types of VET systems

Positioning European VET systems in this continuum between market and State, three main types could be distinguished (Döll/Röhrig/Hardes 1993; CEREQ 1993; Koch/Reuling 1997):

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1) *Chapters 1-4 and 7 are in major parts based on the contribution of R. Koch and J. Reuling (1977): Institutional framework conditions and steering of initial vocational training using Germany, France and Great Britain as examples.*

2) Further aspects of "neo-corporatism research" are addressed for instance by Cohen/Rodgers 1992; Streeck 1994.

Typologies and criteria to cluster VET systems in Europe

- Considering the *relations between training and labour market*, Drake (1991) distinguishes between a "market-led" and a "training-led" training system, the latter being differentiated by "school-based" and "industry-based" systems.

- Considering the *role of the State*, Greinert (1990) distinguishes between three types of training systems: (1) a model determined by the labour market and by qualification requirements (examples: USA, UK); (2) a "bureaucratic", school-based model (examples: F, I, S); (3) a market model regulated in its framework conditions by the State or by tradition (examples: D, A, CH).

- According to the *legal and constitutional basis of education*, Richter (1994) defines (1) an administrative model with weak constitutional and legal regulations and judicial control (e.g. F and other Roman Law based countries); (2) a constitutional model with comprehensive legal regulations and judicial control, complemented by corporatistic elements (e.g. D, A, CH); (3) mixed and contract-based models characterised by corporative agreements and orientation towards the market (e.g. UK, NL, most Scandinavian countries).

- Concerning vocational training and further training in *enterprises*, an orientation towards the market, complemented by corporatistic elements, is prevalent: "The organisation of initial and continuing training based on the principles of private economy also implies the adoption of the legal principles of economic and labour law, in particular freedom of contracts and tariff autonomy." (ibid., p. 186)

- Considering the *location of training*, VET in Europe is organised in manifold ways. It takes place in general and vocational schools, in inter-company training institutions, in the dual system and/or on-the-job, and partly in combination. These different *training venues* are of different importance in EU countries. In F, vocational training in general schools is dominant; apprenticeship training in the dual system is dominant in A, DK, D; training in vocational schools is the main location in B, L, NL and S; on-the-job training is mostly found in I, IRL, UK (and in the USA).

- Considering the *practical orientation*, a distinction can be made between theoretical learning and training on the one hand and work-related training on the other. Mainly theoretical vocational education is found in general and vocational schools in F; on-the-job practical achievement of work experience is characteristic for I, UK, USA). In-plant practical training combined with part-time vocational schools in prevalent in A and D. Mainly school-based training in combination with in-company training is the case in S.

- Considering *standardisation and the importance of certificates* in access to jobs, the following types could be distinguished: highly standardised VET systems as in A and D; more or less unregulated preconditions for job access in I, UK, USA. In F, vocational training is standardised, practical skills are acquired in firms by unsupervised and uncertified on-the-job training.

- In respect of *stratification*, the main opposite types are highly hierarchical VET systems, and highly permeable systems (in relation to performing a job). These aspects of hierarchy and permeability concern in particular the borders between semi- and unskilled labour and people who have completed vocational training. The dual system in A and D can be classified as highly stratified; transitions to different job levels are fluent concerning on-the job training in I and UK; in F classification as a skilled worker is only obtained with a long-term occupational experience.

- a system predominantly steered by the *market* like the British National Vocational Qualifications (NVQ)[3];
- a *corporatistic* regulated system like Germany's dual vocational training system;
- a school-based training system which is mainly regulated by the *State* as in the case of France.

Alternative typologies and criteria are presented in the *box*. Real VET systems are always mixed types. Furthermore, it is often the case that several basic institutional forms of vocational training exist alongside one another in a single country. In general, school-based training systems as the basic form are predominant in the EU.[4]

However, it is rather difficult to form "clusters" of VET systems in Europe since there are various criteria which could be used. Therefore, the following discussion focuses mainly on three types of initial VET systems prevailing in France, Germany and the United Kingdom which can be considered as covering the whole range of the design of VET systems in Europe. It should be added that (initial) training in all countries takes place in various forms - in schools, in enterprises or in both (dual system, "alternance"). Whereas, however, school-based VET is dominant in F and apprenticeship training in D, the UK is characterised by a mixed system without a prevailing training form.

An understanding of the forms of co-operation between different actors and of the steering mechanisms in VET requires a description of the institutional framework in these countries.

2 Institutional framework

2.1 Differentiation and coherence of VET systems

The different types of VET systems are oriented towards occupational fields or specific target groups. Whereas in D there is almost no overlapping between the occupations covered by apprenticeship training or by vocational full-time schools (Berufsfachschulen)[5], training in vocational schools (lycée professionnel) as well as apprenticeship training in F may prepare for similar grades and thus compete with each other. The increasing number of apprentices raised the problem of competing training offers. A first reaction on the part of training policy was to increase permeability between both types of training, e.g. by giving vocational schools - in agreement with local authorities and federations - the possibility to act also as apprenticeship training centres (Centre de Formation d'Apprentissage - CFA; cf. Ministère de l'Education Nationale 1994).

The situation in the UK is less clear. On the national level, only NVQs (since 1986) and General NVQs (GNVQ, since 1990/91) are regulated, but not the form and venues of training. According to the objectives of the (former) government, NVQs and GNVQs should be established as the central elements of vocational training and thus - together with the A-level in general education - should form the national framework for qualifications after completion of compulsory schooling. However, NVQs still compete with numerous traditional qualifications offered by commercial institutions and professional bodies, which exceed the number of NVQ graduates by a factor of three (Robinson 1996).

Concerning the venues and routes of NVQ a distinction must be made between a school or college-based learning route and a work-based learning route. The school-based route primarily aims at the acquisition of GNVQs and offers training above all in art, design and business (FEDA et al. 1997).

Whereas GNVQs are more oriented towards graduates from general education with a high level of performance, NVQs (on the two lower levels) are meant more for school leavers with a lower level of performance. NVQs offer training for specific occupations but are not identical to apprenticeship training. They can be acquired in enterprises, in Colleges for Further Education, at private Training Agencies or in various forms of co-operation between colleges and companies.

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3) The following comments on the UK training system refer in specific issues to England only. The Scottish VET system (Scottish Vocational Qualifications, SVQ) has some major differences which cannot be discussed here. The systems in Northern Ireland and Wales are basically the same as the English one. However, differences are developing which affect both the regulatory framework and the precise characteristics of the different qualification systems (cf. Oates 1997).

4) CEDEFOP monographs on VET systems in the EU, several issues.

5) Except short-cycle vocational schools which do not provide a complete initial training.

In view of the high youth unemployment, all three countries launched training programmes for unemployed and disadvantaged young people. In particular, and like the school-based training system in F, these programmes also aimed to reduce barriers to the labour market entry of young people by socialising a company's costs of selection and initiation into a job.

In the UK, the Youth-Training Schemes (YTS) and, since 1994, the Modern Apprenticeship and Accelerated Modern Apprenticeship programmes[6] have an additional function: they are designed as the principal State instruments for the promotion of formal training as a reaction to insufficient in-company training offers and the resulting shortage of those qualifications. The programmes aim to add broader theoretical knowledge and relevant key qualifications to NVQs at the third level[7].

> In all three countries there is a clear trend towards an increasing differentiation of vocational training. This can be interpreted as a reaction to a correspondingly increasing differentiation of socio-economic requirements. In this process, education and training policy faces the problem of ensuring the coherence of the whole VET system.
> The relationships between differentiation and coherence of VET systems thus appears to be an important field for future VET research.

2.2 Relation between initial and continuing training

Due to the rapid changes in job requirements and to occupational mobility, initial training is expected to prepare people less and less for their entire working lives. The growing importance of continuing vocational training (CVT) in all industrialized countries also has an impact on the functions of initial training.

Although apprenticeship training in D is designed as a qualification to perform a first skilled job, full performance - particularly in demanding jobs - requires in most cases a more or less long period of initiation into the job, often combined with further training (Parmentier 1996b).

In F, continuing training has much more the objective of socialisation and initiation into a first job. The further development of the more theoretical qualifications achieved at vocational schools is left to enterprises. The political goal is to meet the growing demand for medium-level qualifications, particularly through initial training on a higher level (BTS/DUT). Hence, in the last few years continuing training has been gradually separated from occupational advancement (Germe/Pottier 1996).

The British vocational training system does not formally distinguish between initial and continuing training. A broader preparation for jobs is done by GNVQs, which are of growing importance compared to NVQs. Although GNVQs are occupation-oriented, they have more the character of general training and graduates face considerable problems in finding a job.

According to these different functions of CVT, the distribution of company expenditure on CVT in these three countries is rather different. It is substantially higher in F and the UK than in D (BMBW 1990; BMBF 1996; Willems 1994; Marsden 1995).

2.3 Selection and social valuation of vocational training

In all three countries vocational training has less social prestige than higher general education. Some reasons might be that VET graduates have less chances of access to higher education and thus expect lower wages and career opportunities and are exposed to higher unemployment than higher education graduates. However, there are differences between these countries which can be explained by different traditions, VET systems and recognition of training.

Performance in general schools is very important for further paths in training and employment. In the UK the work-based training route, in particular in lower NVQ levels, is regarded as a "last choice". In contrast, GNVQs have witnessed a substantial increase in the past years since they offer access to higher education. Similarly, traditional training routes are more prestigious than NVQs because they are widely accepted by firms and are thus supposed to promise better labour-market chances.

Access to attractive training courses and to careers in intermediate occupational positions in F is largely

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6) For a description of these programmes cf. Richardson et al. 1995a.
7) Comparable to the vocational certificates of the German Dual System.

linked to the level of school diploma and thus shows a marked feature of educational meritocracy. The transition to vocational courses is often regarded as a manifestation of inability to continue the more promising trajectory of general education (Willems 1994) and is usually chosen after school failure.

In D, access to apprenticeship training is in principle open to all young people: from those without a general school certificate, to grammar school leavers and even higher education graduates.[8] However, some segments of apprenticeship training, in particular attractive service occupations or training in large enterprises are regarded by grammar school leavers ("Abiturienten") as an attractive alternative to university studies.[9] In particular for industrial apprenticeship training and some craft training occupations, however, there have been signs in recent years that the high esteem in which apprenticeship training is traditionally held has been undermined by a decrease in job security and career opportunities (cf. Tessaring 1993 and the literature given there).

Thus, an important question for research is the impact of different VET systems on selection processes and on equal opportunities. Similarly, the architecture of VET systems also determines the individual's opportunities for making up for missed training courses later. A comparison between F and D indicates that modular structured VET systems tend to be more flexible than training courses with a fixed structure.

This is also reflected in the arrangements for gaining access to higher education and continuing training. In F, for a long time the choice of a certain training course led to a "dead-end". In recent years permeability for vocational school leavers into upper secondary grammar schools has been facilitated by "bridging classes" (première d'adaptation). The chances for VET graduates to enter attractive higher education courses (e.g. BTS or DUT) are, however, determined by strict selection and competition with graduates of the baccalauréat technologique or bac général.

In D, permeability for graduates of the dual system was for a long time restricted to transition to further training at vocational colleges or "Meisterschulen". In order to improve the attractiveness of apprenticeship training, graduation in the dual system may be equivalent to an intermediate school certificate. Moreover, several German *Länder* have introduced regulations on access to higher education for further training graduates. In fact, however, there are still substantial barriers to such transitions.

In the UK, graduates from the advanced GNVQ level[10] are given the possibility of entering higher education. The British Government is considering giving the advanced levels of NVQ and GNVQ equal status with the A-level (completion of grammar school) and thus allow access to higher education. An additional system for accumulating and transferring credits is being considered in order to create more combinations between general, general-vocational and specific modules of training.

> A question for research should be the impact of higher permeability on educational demand in particular whether or not this leads to an increase in "academic drift". Since the attractiveness of vocational training is to a large extent dependent on its social status and its standing within the labour market in terms of unemployment, wages, career opportunities and occupational position, policy-makers should make every effort to ensure parity of esteem for more general education routes and practical training.

2.4 Training and the youth labour market

It would be jumping to conclusions to explain a high or low level of unemployment among young people solely on the basis of the shortcomings or strengths of the training system. Other variables at play are the way in which enterprises recruit junior staff, how qualifications are recognised and the degree to which the transition from training to employment is organised - apart from a general job shortage due to economic reasons.

The main reasons for the dramatic problems of the integration of young people in the labour market as far as VET in F is concerned are reflected in

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[8] In fact there are different chances of access to in-company training in certain occupations. In addition, selection criteria for training access change in line with the situation on the "training market" (Parmentier/Schade/Schreyer 1994).

[9] Although a substantial number of them (about 40-50%) take up university studies after apprenticeship training.

[10] The other GNVQ levels are: foundation and intermediate.

- an uncoupling of the school-based training system from employment,
- the high number of young people without occupational qualifications, and
- legal or tariff regulations which tend to increase a firm's costs for initiating young people without work experience into a job or the costs of a possible dismissal (Erbès-Seguin 1990).

In F a large number of young people - even those who have completed vocational training - are alternating between precarious jobs, untypical employment contracts and unemployment. Since vocational qualifications are only partly a criterion for tariff contracts (Jobert/Tallard 1995), a number of firms assign young graduates to posts below their training level and favour graduates with higher vocational qualifications. This fact is counted as one of the most important reasons for educational expansion (Verdier 1995).

In D, apprenticeship training also has the function of pre-selecting skilled workers. Graduates from the dual system are entitled to earn at least the basic entry-level wage (Ecklohn) for skilled workers (if employed in a corresponding job); thus, the labour market for young graduates is relatively protected by tariff agreements. The situation however is changing due to the deteriorating situation in the labour market. A training certificate is no longer a sufficient guarantee of being given a permanent contract.

In the UK, firm and job-specific training measures for internal labour markets have increased in recent years. In order to achieve short-term profitability, enterprises which favoured "low-skill options" are now establishing secondary labour markets for low-skilled jobs, coupled with low salaries and little job security as well as little chance of further qualification (Ashton 1993).

In summary, school-based VET systems, like in F or the British GNVQ system, are apparently characterised by weak recognition of qualifications and by difficult transition to a job. Young graduates have to compete with adults and more highly skilled persons when trying to enter the internal labour market. Therefore, young persons with a low level of performance are likely to be forced into secondary labour markets.

On the other hand, work-based forms of training, like the dual system in D or the qualification for intermediate NVQs in the UK, are often combined with a job offer because enterprises are inclined to internalise the returns on their training. Those occupational labour markets have the advantage of encouraging the employment of young people, of showing relatively clear entry-level jobs and career paths for graduates and thus tending to protect young workers from unorganised labour markets (Marsden/Ryan 1990).

> Research concerning the relations between the institutionalised forms of training and the forms of youth labour markets could be important for educational policy and the actors on the labour market. In view of the positive impacts occupational labour markets exert on the transition and the stability of jobs, more research is necessary to explain the factors determining the creation or stabilisation of those markets. And research should assess the possible consequences of a decreasing importance of occupations ("Entberuflichung") in the functioning of youth labour markets.

3 Basic features of VET steering and cooperation

The main characteristics of the process of steering VET systems are the distribution of roles between the State and the social partners, and the distribution of steering functions between different institutions on the national, regional and local levels.

3.1 Roles of the State and the social partners

The three countries under consideration are characterised by different forms of co-operation between the State and the social partners, ranging from "social partnership" in Germany's dual system, the consultative role of social partners in France to the dominant influence of employers' organisations in the UK.

In D, the social partners influence in particular the definition, implementation and control of minimum standards for the company-based part of VET. This is meant to improve decisions by exploiting the expertise of the labour-market actors and thus the coherence and homogeneity of the VET system (Streeck 1983). At the same time, the State is relieved of the difficult tasks of finding compromises and reaching a consensus.[11]

The influence of the social partners in F was in the past limited to a consultative role (Verdier 1996). With the decentralisation of the school and training system, however, the social partners are increasingly included in decisions concerning vocational schools. The objective is to secure greater acceptance for those schools in the economy. However, this does not amount to a new division of responsibilities or a fundamental re-design of the co-ordination between the State and social partners (Lasserre 1994).

In the UK, the Conservative governments since the end of the seventies reduced the influence of unions on vocational training and established a system dominated by employers. NVQs are defined by the newly created Industrial Lead Bodies, which mostly consist of company representatives and are accredited by the Ministry of Education and Employment. Criticism is made of not only the high number of Lead Bodies but also the lack of co-operation with enterprises. Furthermore, it causes comment that they often commission private consultancies, a fact which could undermine acceptance of the standards. The role of the State is, according to a neo-liberal policy, limited to ensuring competition on the VET market (Clarke et al. 1994).

Leaving aside the prevailing VET systems, the different roles of the social partners in steering vocational training can also be explained by their organisational and political power. In D, self-regulation and a compromise orientation of federations as well as the organisational structure of unions prevent a pushing through of particularistic interests. In F, ideological differences between unions and an organisational division between employers associations (between the CNPF, representing mostly big enterprises, and the CGPME, representing SMEs) weaken their willingness to co-operate (d'Iribarne/Lemaitre 1987).

Soskice (1996) notes that the UK's neo-liberal policy impedes the formation of industrial relations. In addition, unions are weakened by debates on demarcation and by internal rivalries (Clarke et al. 1994). Similarly, the ILO points out in its World Labour Report (1997) that the ability of occupational organisations to act is being questioned. "Union membership is down, employers' associations are facing difficulties, the very usefulness of collective bargaining is being challenged. As a result industrial relations are no longer able to serve their purpose as effectively as before ..." (p. 1).

This also applies to several EU countries (e.g. A, F, D, EL, I, NL, P, UK). The reasons are thought to be: the trend towards more individualised labour relations; the greater independence of enterprises; new methods of production and communication; the globalisation of the economy; new approaches to human-resource management; the falling share of manufacturing industries and increasing numbers of white-collar employees, who have tended to be less attracted to unions (ibid.).

The impact of institutional premises and of the organisational structures of the social partners on the efficiency of VET steering are research fields which are expected to gain in importance for two reasons: on the one hand, the exclusive steering of VET would overload the State at a time of increasing dynamics and increasingly complex structural change; on the other hand there is a tendency for organised interests to become weaker due to trends towards social individualisation and towards a greater independence of enterprises.

3.2 Centralisation and decentralisation of decisions

Due to their different traditions, the three countries have divided power between central and decentralised institutional levels in different ways, which also affects the basic tension between the demand of national homogeneity and of regional diversity.

In F, the traditional centralism in VET has been loosened by a devolution (*"deconcentration"*) of central administration and a decentralisation of decisions. With the establishment of regions in 1983 their steering responsibility has been considerably reinforced. The underlying objective was to co-ordinate training better with economic development. The dual responsibility of the central government and of public regional authorities requires negotiations in VET planning and the distribution of limited resources, making the steering process rather complex.

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[11] There is a new tendency, however, to agree on framework regulations at the national level, but to agree on particular arrangements (e.g. concerning CVT or tariff contracts) at the enterprise level.

In a so-called planning contract, all the medium-term programmes of economic, social and cultural development of a region run jointly by State and region are combined. Regions are responsible for running the *lycées*, including the *lycées professionnels*. The Ministry of Education and its school authorities remain responsible for the implementation and closure of training courses as well as the assignment of teachers. Thus, the central government continues to be responsible for the coherent development of vocational training (CEREQ 1993).

In the UK since the mid-eighties, the competencies of the national authorities have been reinforced. They decide on training objectives, the accreditation of occupational standards, the criteria for quality assessment and the resources for public and private training institutions.[12] The distribution of resources and control of their use takes place at regional level. Vocational promotion programmes (Youth Training) are regulated by Training Enterprise Councils (TECs) or the Scottish Local Enterprise Companies. Their main tasks are to identify the qualification requirement of regional economies, to assess the training offers of institutions and to direct the financial resources of the Youth Training Programme towards those VET institutions and enterprises which offer training related to regional requirements.

The distribution of responsibilities in D is determined by its federal structure. The federal government defines the general framework conditions (together with the social partners) as well as the objectives and contents of the enterprise part of the dual system. The *Länder* are responsible for the school part, and the regions decide on expenditure for materials and investment. This requires substantial co-ordination between federal and *Länder* authorities and the social partners at all regional levels. Chambers play an important role: they are entrusted with public functions (e.g. the holding of examinations) and with trying to influence the training offers of their member firms through information and recommendations. Furthermore, they run inter-company training centres.

In all three countries, a convergence in the degree of decentralisation is obvious despite remaining differences concerning their institutional form. In *D* the division of responsibilities between federal and State authorities remains unchanged on the whole. However, there are initiatives in some *Länder* to reinforce the responsibility of schools - including vocational schools - by giving them a certain funding and allowing them to decide on their own on the hiring of teachers, equipment, etc. Some *Länder* in Germany discuss and are establishing partial autonomy for schools (Bildungskommission NRW 1995).

In the UK and F the relationship between central and decentralised steering levels is being reorganised - in opposite directions. In the UK, the traditional emphasis laid on local levels has been reduced in the interest of a national design of framework conditions. In F, decision-making power has been delegated from the central to regional levels. Common to all countries is the fact that the central level has to ensure generally binding training standards, whereas the steering of training offers is left to regional and local authorities.

In the NL, following a report of the Dutch Organisation for Strategic Labour Market Research (OSA) on the benefits of secondary and tertiary education, discussion is also moving in the direction of decentralisation by reinforcing the autonomy of schools. Schools should be financed by a lump sum which may increase or decrease depending on their educational outputs (OSA 1994; Meijers 1996). Similar regionalisation tendencies are observed in Spain.

> The process of transferring decision-making to regions or decentralised institutions and authorities is rather complex, because the objective of a high responsiveness towards changes in regional and local requirements has to be in accordance with the objective of a coherent national VET system. Whereas much research has been done in the field of steering at the central level, the processes and problems concerned with regional and local steering have not yet been analysed sufficiently.

4 Steering VET quantity and quality

As mentioned above, steering mechanisms are in general characterised by specific relations between steering by the market and by the State. In the case of the school-based system in F, steering by the State is dominant whereas the training market in the UK is relatively unregulated. The dual system in D is a training market supported by State framework regulations.

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[12] However, there are certain differences between England, Wales, Scotland and Northern Ireland

4.1 Steering of training capacities

The planning of VET capacities in F by the State faces the problem that the qualification requirements of enterprises can be forecast only inadequately. Therefore, the individual demand for training is decisive for planning, meeting both individuals' aspirations for higher qualifications and the inclination of educational policy to upgrade the prestige of vocational training and to raise the skill level of its population. The expansion of higher vocational training courses, however, was not always congruent with labour-market requirements.

The aim of a high utilisation of training capacities increased the risk of misallocation both as regards the individual demand for training and the skill requirements of firms. The reform of planning procedures in F towards "de-concentration" was able to reduce this structural risk only marginally. Although the introduction of a training levy gave firms' and employers' associations a certain influence over training offers in vocational schools, the situation cannot be characterised as a real "market".

The self-steering mechanisms of the German training system are regarded as being highly responsive to short-term fluctuations in training offers and demand. In a situation where there are major discrepancies between offer and demand, as at present - due to the combined effects of economic recession and cost pressures, growing youth cohorts and changes in training demand - this responsiveness is limited, however (BMBF 1997). This resulted in a market failure which could only be partly offset by State intervention. The "crisis of the dual system" has become a buzzword in recent years.

The functioning of training markets in the UK is impaired by the intransparency of training offers due to multiple competing training institutions and certificates. The implementation of the NVQ system was designed to improve transparency for individuals as well as for firms. But on the whole those and other State interventions could only partially correct the market failure to provide sufficient training offers.

> In view of the high risk of market failure in VET in all the countries under consideration, an important research task would be to analyse the functioning of training markets. The examples of German and British apprenticeship training suggest that the "free play of market forces" has to be backed by public regulations in order to ensure socially desirable as well as future-oriented training offers and to alleviate undesired selection effects.

One of the most important policy measures is to influence the cost-benefit ratio of training and to prevent dead-weight effects. Thus the problem of "poaching" is seen as an important reason for the decline of apprenticeship training in the UK and the decreasing training commitment of firms (Marsden 1995; Clarke et al. 1994; Soskice/Hancke 1996).

4.2 Steering the quality of training

The institutional framework for quality steering in VET differs from country to country and is rather complex. Therefore, it cannot be discussed here in detail.[13]

The basic problem for quality steering in D is to find a compromise between:

- the objective of a high level and future-oriented training on the one hand, and the risk that the ability and willingness of firms to train could be impaired by high training standards;
- the demand of firms for specific qualifications on the one hand and the interest of graduates in also having their qualifications recognised in other firms or in the course of their working life, on the other.

These controversial requirements are balanced out by minimum standards laid down by the State, the social partners and co-ordinated by the Federal Institute for Vocational Training (BIBB).

The basic question for quality steering in F is whether training standards should be oriented:

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13) For a detailed description cf. Koch/Reuling (1997) and the literature given there.

- towards the promotion of employability by adapting training contents, teacher qualifications and training technologies to labour-market requirements;
- or towards a broad and more theoretical preparation for occupational jobs taking account of the longer-term changes in qualification requirements.

Since the mid-eighties French training policy has developed a compromise: reforms of training contents take into account the qualification demand of the economy although they have remained very general in character. The concrete design is oriented towards general political aims for the development of the education and training system.

A basic feature of quality steering in the UK is to determine the *outcomes* of training (competencies) rather than occupational contents. Therefore the assessment of outcomes plays a major role in the NVQ system. The training venues and also the period within which the competencies are acquired are not normally regulated.

Outcomes and standards are defined by the Industrial Lead Bodies and are being developed according to assessment criteria determined by the National Council for Vocational Qualifications (NCVQ) in coordination with the Lead Bodies and Awarding Bodies.[14] According to Wolf (1995), in practice the assessment is rather unreliable and cost-intensive.

Moreover, the Lead Bodies do not seek enough feedback from the firms in a sector when they are developing vocational qualifications. This reduces acceptance of the standards (Beaumont 1996, CBI 1994). Thus, although the UK system allows for more flexible training courses and forms, it leads to quality assessment problems.[15]

Hence, important questions and aspects for European research could be:

- **To what extent and by means of which impact can a training system be regulated exclusively or predominantly by the definition and control of outcomes? And which advantages and disadvantages are connected with primary steering by input standards?**
- **Comparison of the validity, reliability and cost efficiency of assessment practices has to be related to different national concepts of quality steering. The validation of training certificates on the labour market depends not least on the confidence of employers in certified qualifications.**
- **Analysis of different concepts of training standards and related certificates in order to improve the transparency of vocational qualifications and certifications in Europe.**
- **Impact of different standards on the responsiveness of training systems to changes in qualification requirements. Proof of the common thesis that modular training systems imply a higher flexibility for adaptation than regulated training courses.**

5 Funding arrangements[16]

Regulations for the funding of vocational training aim to make a range of training programmes available which are sufficient in number and standard to permit a choice, to guarantee access to a qualification which can be used on the labour market and to balance differences in the range of training schemes between companies of different sizes, between regions and business sectors (Sellin 1995).

The financing of vocational training is anchored in a statutory framework by means of which political wishes and areas of action are defined. Their basic orientation is derived from the contribution of VET towards the dismantling or prevention of (structural) unemployment and towards guaranteeing and increasing economic performance.

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14) Scotland: Scottish Vocational Education Council (SCOTVEC). Currently the Industry Training Organizations and Lead Bodies are being replaced by National Training Organizations (NTOs) on a sectoral basis. The National Council of NTOs provides an umbrella for them. The main themes of the NTO National Council are: understanding future skill needs; developing the skills of those in work; helping young people to maximise their potential. In 1997, the NCVQ has been replaced by the National Curriculum Authority.

15) The British Government is considering introducing an external assessment on the basis of clearly defined inputs (training objectives related to the learning process) in order to improve the quality of training.

16) *This chapter is a summary of the contribution of F. Kath (1997): Financing vocational training.*

5.1 Financing concept and systems

National financing systems have developed in the course of time and are characterised by the respective socio-economic framework conditions. Research-based incentives or proposals for solutions normally respond to a political need for action. However, there is no systematic or continuous extrapolation or evaluation at all.[17]

Financial resources are made available for VET:

- from current or future income or earnings, normally in the form of a financial promotion;
- by means of market control, or by agreed or administrative regulations;
- as payments in accordance with the equivalence principle;
- or by redistribution.

In all EU Member States there are mixed systems for the assumption of shares of direct or indirect costs by companies, the State or individuals (co-financing). However, nowhere do we find a congruence of benefits and costs amongst the individual funding bodies.

When training is offered by companies, the financial regulations focus on quantitative training supply. Since under-supply would, however, lead to a burden in respect of social welfare costs as a consequence of growing numbers of unskilled individuals, State assistance programmes or a financing system which equally distributes the burdens are being established.

5.2 VET financing in DK, D, F and UK

Funding systems

Some of the four countries under consideration here (DK, D, F, UK) have several financing systems which exist alongside each other or have a combination of systems. A distinction can be made between the following financing models (Sellin 1995):

- *The liberal form* (e.g. in the UK). The companies largely define themselves the quantity and quality of initial and continuing training. The State may lay down graduated quality standards but it does not regulate the path to their certification.
- *The neocorporatist model* (e.g. in DK). Employers and trade unions actively steer the financing process; the State limits itself to giving statutory approval to group consensus.
- *The interventionist model* (e.g. in F). The State acts as the main player but does involve the social partners.
- *The dual training system* in D can be characterised as a case of a corporatistly steered, school and company-based training system (Koch/Reuling 1997). The training contents and certificates are controlled by group consensus. Financing however is based on liberal principles with corporatist elements (e.g. collective bargaining agreements on training remuneration).

Financing regulations

Company financing

In DK and F, the financial involvement of companies is laid down by statute:

In DK, a levy is raised, the proceeds of which are returned to training companies via a fund, and the refinancing of costs helps to guarantee workplace-independent initial training. The financing of continuing training in DK is regulated by means of employer and employee contributions via a fund.

In F, VET financing is undertaken by means of a compulsory contribution by companies and covers the entire sector of initial and continuing training. Failure to comply with this provision leads to a tax being levied.

In contrast, in D and the UK there are no statutory financing obligations (exception: construction industry in D). The costs of in-company training are borne in principle by the companies alone.

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[17] In this connection it should be pointed out that CEDEFOP started a project in 1997 to analyse vocational training financing in the Member States of the EU. Within the framework of this project, "financing portraits, policies, key facts and a quantitative and qualitative analysis of CVT in EU Member States" are to be undertaken (contacts: Sarah Elson-Rogers, Sven Age Westphalen, CEDEFOP).

State financing

The development and maintenance of vocational schools is borne by the State in DK, D and F. At best in an indirect manner, funds are made available in most countries to finance out-of-company training (for the disadvantaged, the unemployed and other target groups) by means of employer and employee contributions to social security.

In D, the German *Länder*, the federal government and the Federal Employment Services are involved in financing schemes for specific target groups with, however, in some cases different objectives. In F, training measures for target groups are financed by the State; companies which offer a high level of training are granted additional tax relief.

In D there is no State co-financing of the in-company part of initial training for regulatory reasons. The exception is the subsidising or financing of Community initiatives for out-of-company training in East Germany, in which the corresponding German *Land* and the EU are involved.

The NVQ system in the UK is financed by means of the direct and indirect assumption of costs by the State.

Involvement of the social partners

In DK, the involvement of the social partners is by means of national, regional and collective bargaining agreements. In D, training remuneration (as part of tariff agreements) has recently been cut or frozen in order to increase the willingness of companies to offer initial and continuing training. In F, employer and employee organisations are involved within the framework of a collective bargaining fund on the regional and sectoral level. In the UK, vocational training is financed mainly at the company level. In this respect trade union influence is limited.

Individual financing

The direct financing contribution of the participants in initial vocational training is not at a significant level in any of the four countries. In some cases individuals are required to finance fully or partly their continuing training. In many cases, however, these costs are a tax-deductible item which places them on a par with State co-financing.

5.3 Incentives to improve the quantity and quality of VET

In D, and in view of the fact that only around one-quarter to one-third of all firms offer training places, the unions advocated replacing the existing self-financing system with a system of current receipts funding. This was rejected by employers on the ground that it increased labour costs and interfered with their decision-making autonomy. Nevertheless they agree with tariff contracts which aim at the cost-neutral creation of additional training places, e.g. by reducing training allowances.

In F, financial incentives by way of social security relief or the possibility of deducting training costs from the legal training tax (*taxe d'apprentissage*) have not been very successful. There are several reasons for the limited interest of French firms in training. The increase in training levies for pupils is connected with rising costs for firms which cannot be sure of training their own recruits. And for decades firms have put up with the training monopoly of the State (Lasserre 1994). In-company training would thus be a new experience, and pedagogic concepts and experience are missing.

Furthermore, many enterprises do not regard training as their social task. The training tax which, on the basis of certain quotas, is directed towards apprenticeship training, vocational schools and higher education, thus seems to be counter-productive since by paying the tax, a number of firms see themselves as having been released from their own training commitment and expect the State to provide qualified recruits.

The European Commission claims in its White Paper on "Teaching and Learning" (1995a) to "treat capital investments and investments on training on an equal basis" (fifth general objective): "... know-how and skills acquired by employees during the course of their duties (should be considered) as adding value to the company, so that part of the expenditure on training and salaries during the training period can be considered as depreciable in tangible fixed assets and transferred accordingly on the balance sheet." (p. 70).

In the countries under consideration, however, incentives of this kind are scarcely used. Only in F are companies with exceptionally high expenditure given a tax reduction for initial and continuing training.

Another incentive is considered to be the issuing of vouchers by means of which public or private institutions offer a guarantee to take over the costs. When the range of training schemes is not sufficient all that vouchers do is lead to a fully financed assistance programme. Financing by means of vouchers implies moreover a tendency towards the privatisation of initial and continuing training coupled with State co-financing.

> In almost all EU Member States the commitment of enterprises to training is on the increase. At the same time, however, such an engagement is hampered by increasing cost pressures. Therefore, an analysis of the institutional conditions and incentives for enterprise training would be an important European research area. This includes questions of costs and financing of training, which up to now have been located more in the field of continuing training.

5.4 Evaluation of financing regulations

No research has as yet been conducted in order to establish to what extent alternative financing regulations of initial and continuing training achieve the goal of providing a qualitative and quantitative training offer of a high standard which offers a choice and helps to balance market failures.

In D, the regulation on levy-based financing by means of a training levy, which in theory existed between 1976 and 1980, was never applied. Hence there is no scientific evidence about the link between levy financing and the offer of training places.

A critical assessment of financing administration by means of the TECs in the UK (Felstead 1994) shows that the existing evaluation system prevents financial incentives from supporting cost-intensive and high-standard training schemes. Instead, the trend is for cheaper, easier and shorter training schemes to be promoted. According to the study, the goal of achieving better and more efficient returns on training is hence more or less reversed.

A study by INSEE, in contrast, comes to the conclusion that the financing regulations in F have led to an increase in participants in continuing training measures. Furthermore in later working life participants earn a wage which is on average 25% higher (Goux/Maurin 1997).

6 Performance of VET systems

The performance of a VET system can be assessed in terms of effectiveness and efficiency. *Effectiveness*, e.g. of a training measure, may refer to the success of training leavers in finding jobs (e.g. compared to those people without a corresponding training).

> "Effectiveness" means the extent to which the objectives of a policy or a programme are achieved, without reference to costs. "Efficiency" or "cost-effectiveness" refers to the ability of a person, organisation or the educational system to produce a desired result taking into account costs and benefits.

The effectiveness or efficiency of a VET system may be analysed in terms of its *internal performance*, e.g. the organisation, funding and functioning of training institutions, the quality of trainers and equipment, examination success, etc. A related kind of performance yardstick for education and training systems is presented by the OECD (1996a, b). The performance of students (marks, examination success, admission to best universities) are used as assessment criteria.[18]

The *external performance* of a VET system refers to the assessment of the costs and benefits of training or to the success of graduates in employment (wages, unemployment rates, career, mobility, etc.).

A number of researchers stress, however, that the performance of VET systems, in particular their external efficiency, depends primarily on labour-market conditions, wage structures, industrial relations and the organisation of work, which are influenced only partly by education and training. Unemployment or inappropriate employment of qualified people thus does not necessarily mean that the VET system, or even the individual, has performed poorly, but that to a large extent there is an overall shortage of jobs.

A number of factors influence VET performance:

❑ Analyses in terms of the *internal labour market* on the one hand and the *occupational labour market* on the other also underline the question

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[18] The data given by OECD relate to students and are a result of the Third International Mathematics and Science Study (TIMSS) and of the International Adult Literacy Survey (IALS).

Performance of national VET systems and the wage-labour nexus for intermediate qualifications in five countries

	Germany	Japan	France	United Kingdom	United States
Effectiveness of the national training systems					
Organisation and functioning of the school system	• Effectiveness of general school education • Effectiveness of higher technical training	• High degree of homogeneity in general school education • Weakness of technical school training	• Good level of general school education • Poor adaptation of technical training to companies' needs	• Low level of general education achieved by the majority of pupils • Almost complete lack of technical education	• Major participation in higher education but low level of the "forgotten half" • Low level in technical channels
Organisation and functioning of in-company training	• Effectiveness of apprenticeship system • Major commitment by companies to initial and continuing training	• Intensity of initial and continuing training in the company • Compensates for the weakness of technical education	• Weakness of apprenticeship. Continuing training does not balance out the gaps in technical training	• Major crisis in apprenticeship not compensated by the creation of YT programmes • Weakness of continuing training	• Very low development of apprenticeship • Low investment by companies in continuing training
Funding of training	• Funds allocated to vocational training by the federal State, Länder and companies	• Weakness of public funding • Compensated by the contribution from companies and households	• Considerable public financing of general and technical schools	• Public financing of education and YT programmes • Reduction of funds since 1980	• Low volume of funds allocated to primary and secondary education • Large volume of funds allocated to higher education
Degree of institutionalisation of training	• High degree of institutionalisation and codification of qualifications	• Low degree of institutionalisation and codification of qualifications	• High degree of institutionalisation and codification of qualifications	• Very low degree of institutionalisation and codification of qualifications	• Very low degree of institutionalisation and codification of qualifications
Wage-labour nexus					
Organisation of work	• Based on cooperation and participation	• Strongly based on participation	• Very hierarchical and little participation	• Very hierarchical • Major division of labour	• Very hierarchical • Major division of labour
Forms of mobility	• Strongly based on vocational qualifications	• Closely linked to the evaluation of salaried employees within the company	• Major role of seniority and little recognition of qualifications	• Mobility difficult for salaried employees who do not have the status of skilled workers	• Limited recognition of vocational qualifications
Nature of industrial relations	• Stabilised	• Stabilised	• Somewhat adverse	• Very adverse	• Very adverse
Determining factors of salary income	• Influence of seniority and vocational qualifications	• Major influence of seniority and vocational qualifications	• Main influence of seniority and experience	• No direct influence of qualifications except for skilled workers	• Weak influence of vocational qualifications on salaries
Nature of wage-labour nexus	• Mainly participatory	• Mainly participatory	• Poorly participatory	• Very poorly participatory	• Very poorly participatory

Source: Caroli 1996 a

of the mobility of people, i.e. their ability to shift between different jobs and enterprises (Eyraud/Marsden/Silvestre 1990; Marsden/Ryan 1991) and thus are an indicator for VET performance.

- ☐ In the case of countries with prevailing occupational labour markets, apprenticeship is dominant and qualifications are on the whole transferable from one company or occupation to another. These kinds of labour markets are prevalent in Germany and the UK. In countries with internal labour markets (e.g. USA, Japan) firms concentrate their training on specific skills; training for occupational mobility tends to be lower in these cases.
- ☐ Labour market "success" alone does not allow for an analysis of performance, however (Caroli 1996a). Therefore, it appears necessary to take account of additional aspects, e.g. the degree of institutionalisation (Campinos-Dubernet/Grando 1988). Soskice (1993) considers that the success of VET systems in Switzerland, Germany and Sweden is based on their high degree of institutionalisation and their congruence with occupational structures.
- ☐ Lutz (1992) points to the importance of work organisation in order to explain the training inclinations of French and German firms. Buechtemann/Vogler-Ludwig (1993) show the importance of economic, social and institutional factors, in particular "the rules for the distribution of income", the wage structure, the functioning of financial markets and the system of institutional regulation.
- ☐ Caroli (1996a) analyses several dimensions of national VET systems in Germany, France, Great Britain, the USA and Japan and their organisation of labour relations *(box)*. The performance criteria used are less output-related (e.g. grades, unemployment, etc.) but refer to the organisation, institutionalisation and funding of VET systems on the one hand (internal effectiveness), and to the organisation of work, industrial relations, mobility and the "wage-labour nexus" on the other (external effectiveness).

As a result, Caroli draws the following conclusions for intermediate qualifications in the countries under consideration:

Germany: On the whole, the effectiveness of the training system and the existence of a wage-labour nexus explains the relative good performance of Germany in the segment of intermediate qualifications.

France: The effectiveness of the general education system, the weakness of technical education - at least at secondary level - and the limited participatory role of the wage-labour nexus come together to explain the average or even mediocre character of French performance related to intermediate qualifications.

Japan: Initial and continuing training are closely linked and the quality of general education, combined with the highly participatory nature of the wage-labour nexus, explain the high level of intermediate qualifications amongst the Japanese workforce.

United Kingdom: The low level of general education and the emerging crisis in the apprenticeship system under the pressure of the poorly participatory wage-labour nexus help to reveal the poor British performance in the segment of intermediate qualifications.

USA: Altogether, the lack of general knowledge on the part of future salaried employees and the poor participatory character of the wage-labour nexus come together to explain, via the weakness of vocational training, the poor performance of the American training system in respect of intermediate qualifications.

The analysis by Caroli (1996a) reveals that Germany and Japan have a rather effective training system and a participatory wage-labour nexus. The provisions for rounding off the training-labour nexus are less favourable in France where the different elements in the wage-labour nexus have a negative effect on the development and the quality of initial vocational training. The same goes for Great Britain and the United States where the poor quality of general education contributes even more to a "low" rounding off of the training-labour nexus in the segment of intermediate qualifications.

7 National training systems in the context of European integration

A country's vocational training is embedded in its cultural, social, economic and political context. Comparative studies have revealed the complex country-specific interrelations between VET design and the form of enterprise work organisation and industrial relations (cf., e.g., Sorge/Warner 1986; Drexel 1995; Soskice/Hancke 1996).

7.1 Harmonisation or convergence?

In view of the emergence of a European economic and social area, it is being discussed whether the existing divergencies of VET systems in the Member States, as discussed above, may be reduced.

In this context, two basic models of development must be distinguished:

- The first model of a *harmonisation* of VET systems by means of legal acts of the EU is precluded by the subsidiarity principle laid down in Article 127 of the Maastricht Treaty since there is no definite reference model: the Community is to merely support and supplement vocational training policies of the Member States. Furthermore, the obvious supposition is that certain qualifications can be generated by different configurations of VET systems. And there are few significant research findings about the comparative advantages or disadvantages of *different* national VET systems on economic and social development. It is difficult to isolate and attribute those effects, as illustrated by research on the methodological problems of the contribution of training to economic growth (cf. e.g. Büchtemann/Verdier 1995 and Part Two of this report).

- The second model is based on the assumption that national VET systems will *converge* due to increasing pressures of adaptation induced by international competition and increasingly similar technologies. Thus, education and training is one of ten factors which influence national competitiveness, as indicated by the UK "Competitiveness White Paper" (DfEE and Cabinet Office 1996) and by international comparative studies on the importance of skilled workers (Sorge/Warner 1986; Maurice/Sorge 1989; NIESR 1995a; NIESR 1995b; Prais 1995).

Though these analyses do not establish a direct link between a VET system and economic competitiveness, and an inevitable harmonisation of VET systems (Piore/Sabel 1985; Georg 1997a), they underline that the available qualification potential influences the options for certain paths of technical and organisational development and thus for economic competitiveness.

> In the search for a suitable concept for the reform of VET systems, comparisons of problem solutions and best practices as well as cooperation in VET policies between different Member States are gaining in importance. European training programmes like LEONARDO DA VINCI and SOCRATES present a platform for various transnational initiatives on a decentralised level. Since there is no "one best way" of institutional design of VET, "convergence" denotes primarily an assimilation of performance, i.e. the transformation of proven principles of arrangements in other Member States in a functional and equivalent way, and in accordance with the national system.

7.2 Common principles of VET steering

Common principles of VET steering arrangements in D, F and the UK, however institutionalised in different ways and intensities, are:

- *Public responsibility* for vocational training, either for training itself (e.g. F), for the establishment of minimum standards (D) or for complementary training programmes in case of market failures (UK).

- *Involvement of social partners* in decision processes albeit to varying degrees: extensive responsibility of social partners in D; consultative role in F and dominance of employers in the UK.

- *Alternating forms of VET* which have a long tradition in the German dual system and are gaining in importance in F ("alternance scolaire"). In the UK there are various forms of cooperation between firms and schools.

- The *definition of national standards or qualifications* is embodied in German and French VET systems. Also in the UK's market-based VET system the recognition of national standards is increasingly perceived to be a major instrument for the promotion of transparency of vocational qualifications, for the opening up of clear career opportunities and for improving coherence.[19]

- *Easier access to continuing vocational routes*: In particular in F and - somewhat less so - in D, the permeability and thus parity of esteem between general and vocational education is being improved. In GB, the future modular structuring of the VET system is to improve horizontal and vertical mobility between general education, general training and vocational training routes.

> *"An important task of comparative European vocational training research is to identify common features in the concepts behind vocational training and their effect on the various national contexts. In this way, vocational training research can promote the transnational exchange of experience about tried-and-tested solutions and place this on more solid foundations." (Koch/Reuling 1997).*

8 Conclusions

The *diversity of VET systems* in EU Member States and the different criteria to be considered render comparisons rather difficult and hamper the forming of homogeneous country "clusters".

Consideration should be given to, for example, differences in:

- the roles of the State, enterprises and the social partners in steering VET;
- the legal and constitutional foundations of the education and training systems;
- learning venues and combinations of learning venues;
- the characteristics of a practical or general orientation of training;
- the relations between VET and labour markets;
- the standardisation and significance of curricula and certificates;
- the stratification and degree of permeability both within education and training and between training and employment.

In most of the countries considered there are clear trends towards a differentiation of VET, reflecting above all the differentiation of socio-economic requirements. Here, the problem arises of how education and training policy can ensure the *coherence of VET systems* at national level. The relation between differentiation and coherence is also an important field for future VET research.

Another basic question is whether VET should prepare individuals for their whole working life to facilitate mobility, or to what extent it should meet the current requirements of jobs. This refers to the *trade-off between mobility and productivity* and requires decisions concerning the transferability and flexibility of training on the one hand, and their labour-market orientation on the other. This "trade-off" would not exist, however, if:

- enterprises increasingly required broad and transferable skills (in addition to or combination with specific ones);
- training curricula were able to combine both "key qualifications and competencies" and specific qualifications.

Much more research is needed on these aspects and on the question of how both demands could be reconciled by appropriate curricular design (cf. also Part Four).

Access and admission to VET may also reflect the social distribution of status and the assignment of positions within the labour market. It is of particular importance, therefore, to avoid *social selection* by training and to achieve *parity of esteem* between general and practical training routes. The verification of the conditions, criteria, and actions to improve the attractiveness of VET, including in terms of labour-market success, should be a prior task for policy-makers, practitioners and researchers.

Uncoupling vocational training from labour-market requirements involves the risk of a lack of recogni-

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19) The new British government is currently in the process of defining new standards for quality and recognition of learning (working title: "The Learning Age: A Renaissance for a New Britain").

tion for skills and a growing exposure to unemployment and precarious jobs, in particular for young people entering the labour market. Much more research is needed on the *relations between the institutionalised forms of training and the forms of youth labour markets* which could underpin political measures to stabilise this process. This implies more transparency in the demand of firms and in the skill potential of people.

Decentralisation and regionalisation are of increasing importance for VET steering. Policies in this direction should, however, consider:

- that national standards of certification and recognition of VET should not be impaired in order to ensure the geographic, occupational and sectoral mobility of workers;
- that the role of local actors - social partners, regional authorities, training and labour organisations - should be reinforced in this process. In particular, the degree of organisation of the social partners, and the willingness and ability of all actors to reach a consensus, is an important precondition.

The "free play of forces" and the associated risk of market failure require increased policy and research efforts to improve the *functioning of VET systems*. It seems essential to change market mechanisms by public regulations in order to guarantee socially-required and future-oriented training offers and to avoid undesirable social selection.

In view of the growing importance of enterprise training on the one hand and cost pressures on the other, it seems necessary to evaluate and implement potential incentives to *promote greater commitment to training* on the part of companies. This also includes *evaluation of training benefits* - pecuniary as well as non-pecuniary ones - for enterprises and discussion of a reallocation of costs between enterprises, State and individuals.

There are insufficient research and practical findings to say whether the VET system should be oriented towards training outcomes or towards input standards. In this connection, aspects such as the flexibility and quality of training and modular training should be considered as well as the acceptance and validation of those certificates in the labour market.

Part Two
Socio-Economic Framework of Vocational Education and Training

Everyone will agree that unemployment is the biggest challenge facing countries inside and outside Europe. However, not everyone agrees on the causes of unemployment, how to achieve full employment or, in this connection, the role of education and training in bringing down unemployment - in particular structural unemployment - and creating new jobs. The complexity of the labour market and the links between vocational training and qualifications are discussed in this part from two angles: from the manpower demand and supply sides.

On the demand side, two aspects in particular play a role: the demographic trend on the one hand and changes in individual participation in education, training and work on the other. Demographic changes will have an enormous impact on the age structure of the working population in the medium and long term, and will thus also influence education and training, especially vocational training. Whereas demographic effects - in the short and medium term - must be regarded as exogenous, changes in behaviour take place within a complex framework of expectations, individual and social environments and their repercussions on decisions about education and training. A particularly important role is played here by employment and career opportunities which are opened up by certain training paths.

On the demand side, it is changes in the structure of the economy and the 'modernisation' of production processes in particular which determine the qualification requirements of the labour market and employment opportunities. Technological innovation, changes in the organisation of production and work, and globalisation and flexibilisation trends also determine to a large extent the recruitment and deployment patterns of workers with different qualifications. It is not just quantitative changes in employment which are of interest here, but also - and above all - changes in the substantive requirements of workers' qualifications and competence.

A crucial factor in determining preference for certain training paths and qualifications - both on the part of individuals and on the part of companies and the State - is the cost and expected benefits of 'training investment'. In determining those costs and benefits, there are a host of theoretical and empirical demarcation and attribution problems, which are also controversial in the field of research. A summary of the macro and micro-economic research work is supplemented by an analysis of the effects of training and qualification on productivity in companies in the manufacturing sector of the EU.

The matching of demand and supply on the labour market is described from two angles: on the quantitative-structural side as unemployment, and on the qualitative-substantive side as 'over-qualification'. What emerges is that, while there is a trend towards an inverse relationship in nearly all EU countries between qualification and unemployment, there also appears to be a growing trend towards people working in jobs for which they are over-qualified. However, it should be pointed out that there are considerable conceptual and empirical difficulties in identifying under or over-qualification for a job.

Further discussion in this part is devoted to future-related aspects, such as new professions and requirements as well as the dangers and negative consequences of economic, social and technological restructuring, and in particular the effects of information and communication technologies. Options for reducing unemployment are looked at from a short to medium-term viewpoint, particularly as part of a concerted effort to improve the economic conditions. Education and training play a supporting role in this respect: they should concentrate first and foremost on achieving a better match between qualification and requirement profiles in order to reduce structural imbalances. In the long term there are no alternatives to enhancing the qualifications of workers in line with social and economic development.

Although the potential and usefulness of forecasts of the future supply and demand of skilled workers is a matter of dispute, it is remarkable how, in spite of their differing training systems and economic structures, those EU countries which make such forecasts unanimously expect a rapid fall in the demand for unskilled workers and a corresponding rise in demand for highly skilled workers. There are differences, however, in relation to the employment of people with intermediate qualifications. In many countries it is expected that members of this group will increasingly be replaced by better qualified workers and that they will be edged out into jobs which were previously held by the less skilled.

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Education, training, the labour market and the economy are linked in many respects. It is useful to make a distinction between the supply and the demand side, as illustrated in *figure 2-1*. "Supply" denotes the potential of people who are inclined to work, and are characterised by individual profiles, such as gender, age, qualifications, etc. "Demand" for labour is equivalent to the number of available jobs and their profiles, e.g. sectors, occupations, work tasks and position within the firm.

Both supply and demand are balanced or "matched" on the labour market. Discrepancies ("mismatches") between personal profiles and job profiles may appear in quantitative terms (e.g. unemployment or respectively shortages, overtime) or in qualitative terms (e.g. under-utilisation of skills, over-education, precarious jobs, and the opposite). Those "gaps" between supply and demand may occur in specific segments of the labour market, e.g. in certain regions, occupations or sectors, and may affect some groups of people more than others, e.g. males/females, young/old people, the "disadvantaged", foreigners, etc.

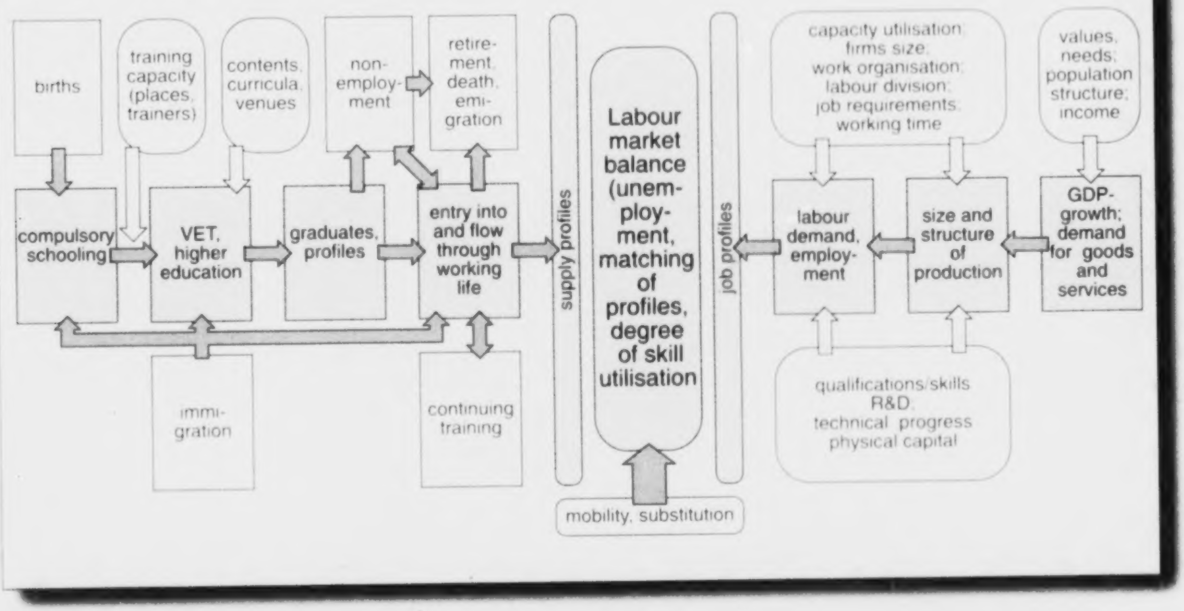
Several factors have an influence on the manpower supply. Demographic change modifies the potential demand of individuals to undertake vocational training and thus increases or relieves the pressures on VET systems and capacities. It also influences the size and age-structure of the labour force (European Commission 1997a; Eurostat 1997d).

Another factor of influence is participation in education, training and the labour market reflecting the behaviour of people. "Participation" is the result of decisions made by individuals taking into account personal abilities and preferences as well as available opportunities and prospects expected in training and the labour market. Changes in participation rates thus also reflect the attractiveness of a training route as well as constraints due to shortages in training or job opportunities.

On the demand side, changes in the number and structure of available jobs are influenced by, among other things, economic conditions, new technologies, strategic orientations of firms and changing work organisation.

A decisive factor is the extent to which VET systems are responsive to changes in the skill requirements of jobs and the way in which VET contributes to economic growth, productivity and employment. These questions related to the costs and benefits of education and training are not only important for a nation's economy, but also for enterprises and individuals.

Figure 2-1: Supply and demand side of the labour market


births
training capacity (places, trainers)
contents, curricula, venues
non-employment
retirement, death, emigration
compulsory schooling
VET, higher education
graduates, profiles
entry into and flow through working life
immigration
continuing training
supply profiles
Labour market balance (unemployment, matching of profiles, degree of skill utilisation
mobility, substitution
job profiles
capacity utilisation; firms size; work organisation; labour division; job requirements; working time
values, needs; population structure; income
labour demand, employment
size and structure of production
GDP-growth; demand for goods and services
qualifications/skills R&D; technical progress physical capital

1 Changing patterns on the supply side

As the above illustration shows, changes in the size and the structures of the supply side are mainly caused by demography (births, migrations), by the qualifications achieved in education and training, and by labour force participation.

> "Demography" indicates natural population fluctuations (births, deaths) and migration (emigration, immigration). Both result in changes in the size and age-structure of the population.
>
> Factors which influence demographic change are, amongst other things:
>
> ❑ Concerning births: fertility, age structure, family planning, birth control; indirectly: the economic and labour-market situation, expectations, female labour force participation, etc.
> ❑ Concerning deaths: health/life expectancy, gender distribution, accident risks, etc.
> ❑ Concerning migration: the economic and labour-market situation, individual motives, etc. (cf. the discussion on mobility in Part Five).

Whereas the quantitative impacts of demographic change on VET systems and the labour market are "exogenous"[1], participation in education and training as well as in employment is dependent on two factors: firstly on the attitude or "behaviour" of people towards vocational training[2] and work, and secondly on the opportunities and constraints (available training places, jobs) in the VET system or the labour market.

Changes in the number of participants in VET and the workforce can thus be broken down into a "demographic component" and a "social component", the latter including "behaviour" as well as capacity constraints.[3]

A breakdown of this kind offers greater insight into the factors which influence the supply side and highlights opportunities for intervention by means of policies. It is self-evident, however, that participation in VET or the labour market can never exceed the limits set by demographic development.

1.1 Impacts of demographic change[4]

Theories of the relationship between demography and the wealth of a nation were and still are dominated by increasing populations.

Research on shrinking populations, however, and in particular discussion of the implications for education and training, is less developed. Most empirical work has focused on the impact of demographic cycles on the labour market, wages and unemployment (for a review cf. Bloom/Freeman/Korenman 1987).

Boserup (1965), in contrast to Malthus' theory of the interdependence between population change and subsistence level, advances the theory that one reaction to a growing population would be a higher intensity of labour (similarly: Simon 1993, Felderer/Sauga 1988, Kelley 1993).

In her more recent scenario, Boserup (1996) takes a pessimistic view of this issue. In a model on the interrelationships between population, the environment, technology, the labour market[5], family structures[6] and culture *(figure 2-2)*, she states that Western Europe has passed on its pioneer function to the USA and Japan.

Considering the impacts of demographics on VET, things appear simpler. Given a constant VET participation of each generation or age cohort in education and training, the individual demand for VET will only change due to the size of age cohorts. Future pressures on or relief of VET capacities can be forecast relatively easy in the framework of demographic projections, and VET policy should be prepared in time to anticipate those fluctuations.

Ageing of the populations and old-age dependency

"Ageing" is the term used to describe changes in the age structure of a population, which involves a grow-

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1) There are however, as research confirms, also close correlations between the level of qualification/skills or the economic situation and birth rates, although these effects impact VET and the labour market only in the longer term.

2) General education is at most compulsory until a certain age.

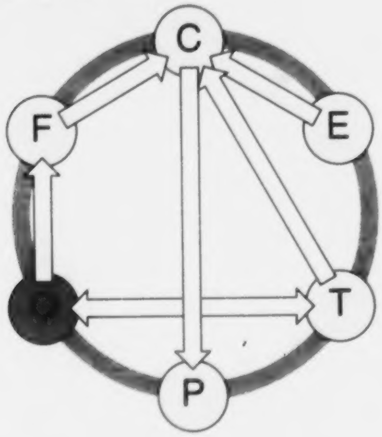
3) Of course there is still a third "residual component" describing those influences which cannot exactly be attributed either to demography or to social factors.

4) *Parts of this chapter are based on the contribution of G. HULLEN (1997): Demography, labour and training: State of research and European Developments.*

5) For an empirical analysis of the effects of demographic cycles on unemployment in Germany cf. Schultz (1995).

6) For a discussion of the impacts of demographic transition on family formation and dissolution in western countries cf. Lesthaeghe (1992).

Figure 2-2: Boserup's model of present change in Western Europe with birth decline and changing values



C = culture; E = environment; F = family structure;
O = occupations; P = population; T = technology level

The starting point for Boserup's scenario is the labour market (O). The arrows O <-> T indicate that traditional employment declines as a consequence of technical change and at the same time technical and more highly qualified employment gains ground. Family structures are changing (O -> F) in that the proportion of non-domestic activities increase and child care becomes increasingly institutionalised.

Against this backdrop, formal partnerships and the birth rate decrease. The social status of employed, qualified women is raised, that of housewives falls (F -> C). Resistance to immigration grows and the population stagnates or shrinks (C -> P). Technical change has additional effects on society: on the one hand, there are growing doubts about the sustainability and safety of energy sources (T->E->C), and on the other Boserup assumes that the secularisation of scientific thinking goes hand in hand with growing uncertainty which, in turn, encourages irrational behaviour, e.g. superstition and religious fundamentalism (T -> C).

Source: Boserup 1996

ing proportion of older and a shrinking proportion of younger people. Ageing is the result of birth rates below the level of reproduction and higher life expectancy, and indirectly of the age composition of population itself, modified by the age-structure of migrants.[7]

This process of the ageing of populations is currently shaping the demographic development of almost all European Member States and will continue to do so in the future (European Commission 1997a, b; Eurostat 1996b, 1997d; Calot et al. 1996; Coomans 1996; Rubery/Smith 1997). Its impacts are particularly important for the labour market and the working-age population (WAP) made up here of people aged between 20 and 59.[8] *Table 2-1* shows the results of WAP projections made by Eurostat in 1996 and 1997.

Table 2-1: Working age population (20-59 years) in 1995 and estimates for 2010

	1995	2010	2020
	(1000)	1995 = 100	
Italy	32233	96.2	91.3
Finland	2836	98.4	93.8
Germany	47113	100.1	96.0
Belgium	5533	101.6	98.1
Denmark	2949	97.6	98.2
Austria	4578	101.1	100.0
Netherlands	8937	101.8	100.6
UK	31698	102.0	101.5
France	31246	105.4	101.9
Spain	21300	106.4	102.0
Sweden	4697	99.8	102.2
Greece	5645	105.4	103.1
Portugal	5356	106.2	105.4
Ireland	1818	109.2	114.5
Luxembourg	232	111.4	114.7
EUR 15	206170	101.7	98.7

Sources: European Commission/Eurostat 1996, 1997 (baseline scenario); countries sorted by index 2020

Following a period of WAP growth over the past 20 years, the total WAP will more or less stabilise in most EU Member States between 1995 and 2010. Eurostat even expects a slight increase for most Member States (except Denmark, Italy, Finland and Sweden).[9] Demographic development alone in the next decade will not, therefore, substantially relieve the unemployment problem.

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7) Balance of the age structures of immigrants and emigrants.

8) However, a considerable number of older people are still in employment. In some countries retirement age, which dropped to around 60 in the past, will be raised in future (cf. for a discussion of the demographic, legal and employment aspects of early retirement and for a projection to the year 2000 in Germany: Fuchs/Hoffmann/Thon 1996).

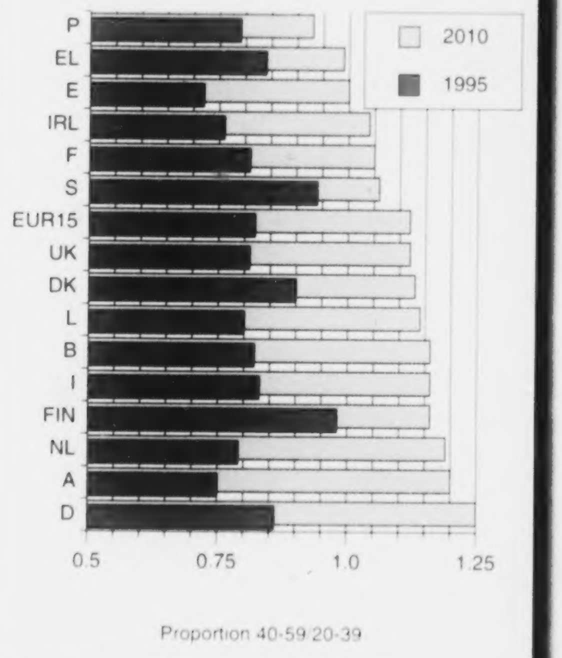
9) In contrast to the Eurostat projections, a projection of Prognos (1997) results in a WAP *decrease* in all EU countries except IRL already in the period up to 2010. It will be highest (i.e. decrease more than -4 %-points) in L, D, DK and EL. For the total EU, the WAP expected by Prognos will be more than 4 million lower than 1995. Eurostat however expects an increase of 2.5 million from 1995-2010. Thus, the total WAP in 2010 differs by 7.7 million in both projections.

In the ten years after 2010, and even more so in following decades, WAP will fall significantly at a faster rate than the total population. "The reduced rate of increase and the subsequent fall in the population of working age could reduce the pressure exerted by labour supply on labour demand if participation in the labour market remains at the present rate." (European Commission 1997a, p. 2)

Looking at the *age structure* of the WAP, the next 15 years will mark a historical turning point *(figure 2-3)*: the WAP in EU Member States - with the exception of Portugal, Greece and Spain - will contain more old people than young people.

The old-age dependency becomes obvious, if the total WAP is set against the growing number of individuals over the age of 59. People from the baby boom cohorts (born in the fifties and sixties) are reaching the age of retirement and the ratio of the older population to the 20 to 59 year olds (old-age dependency ratio) will rise constantly until the fourth decade of the next century.

Figure 2-3: Ageing of the EU working age population 1995 and 2010: Proportion of persons aged 40-59 years / 20-39 years



Sources: Hullen 1997 (based on EUROSTAT)

In the whole EU, for each person of working age today there are 0.37 over 59-years olds. The situation is more favourable in the "younger" populations in Ireland, The Netherlands and Finland, and less favourable in Sweden, Greece and Italy. By the year 2010 this ratio for the EU as a whole will increase to 0.44. Ireland, Luxembourg, The Netherlands and Portugal will probably remain far below this. The ratios in Italy and Sweden are well above average.

Against this background, the European Commission states that in the longer-term "significant pressure for higher public expenditure is very likely to occur ... Public pension schemes will bear much of the pressure since their expenditure is highly dependent on the age structure of the population."(European Commission 1997b, p. 10) These constraints may also affect education and training since a considerable part is financed or subsidised by public budgets.

> The ageing of population also has indirect effects on VET. Social and family life will be increasingly influenced by the needs of older people[10] and will bring about a rising demand for health care, social services, housing and services related to their specific needs and preferences (leisure activities, financial advice, etc.). VET systems should be prepared to anticipate these shifts in demand by providing more training offers for the relevant occupations.

Renewal of the working-age population

Renewal of the working-age population signifies the ability to replace leaving workers by newcomers. This renewal serves, amongst other things, the supply of growing and prosperous sectors of the economy and may contribute to productivity, new skills and greater flexibility on the labour market.

As pointed out by the European Commission (1997a), demographic change in Europe will result in a negative renewal balance for the WAP *(figure 2-4)*.

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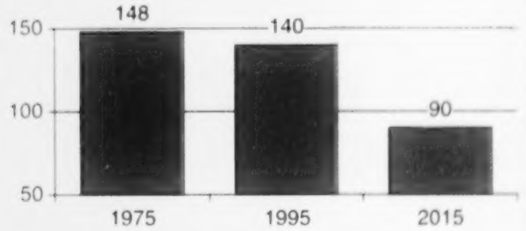
10) The European Commission (1996c, p. 10) defines two types of older retired people: those who are mentally and physically still vigorous and are actively taking part in social and economic life, and those who are visibly handicapped. Thus, the category of the "third age" should be divided into two categories of retired persons.

Figure 2-4: Replacement ratio* EUR 15



* number of entries into working age population for every 100 leaving

Source: European Commission/Eurostat 1997

The balance between incoming and outgoing flows of the WAP started to decrease around 1990 and will be negative from 2009 onwards. Thus the possibilities of skill renewal due solely to the entry of young people into working life will be limited. In terms of replacement ratios[11], the rate for the whole EU will fall significantly over the next 20 years, from 140 entries/100 departures in 1995 to 90 / 100 in 2015, and thus will cause a net deficit.

> In order to compensate for the decreasing renewal process, measures to activate the available reserves on the supply side will have to be accompanied by measures to intensify and improve training - in particular continuing training of the labour force -, and to enable greater flexibility. It will also be increasingly important to create better conditions of employment and continuing training for women for two reasons. On the one hand, women's qualifications are equal or tend to equal those of males in most countries; on the other hand, their employment opportunities and labour force participation rates are still falling behind. The growing importance of work for women means that the question of equal opportunities will become a fundamental dimension of economic and social change and could also compensate partly for the negative renewal of the work force.

Links between demography and vocational training

There are both quantitative and qualitative links between demography and vocational training. On the one hand demographic developments - together with education policy and the labour market - affect the number of pupils and trainees in the corresponding educational and training institutions.

On the other hand constraints imposed by demographic cycles lead to responses in educational choice and behaviour (Falaris/Peters 1992). In recent decades this "social component" has led to greater demand amongst young people for training than might have been expected in demographic terms only. Forecasts about the future numbers of pupils cannot, therefore, be based only on population developments. They must also take into account the future social demand (cf. chapter 1.2).

The number of young people in the age groups relevant for initial VET will drop much more than the total of WAP, as indicated above. In the past two decades (1975-1995) the number of people in the EU up to the age of 20 dropped from 110 million to 90 million. If birth rates remain unchanged, the decrease will continue up to around 80 million in 2020 and 52 million in 2050 (Eurostat 1997d).

In the very long run, up to the year 2050, and according to the Eurostat baseline scenario, the share of young people aged under 20 will decrease in all EU countries. The further decline will be steepest in Ireland and Spain. At present, Germany and Italy are the "oldest" countries and Ireland the "youngest" country in the EU. Up to the year 2050, Denmark, Luxembourg and Sweden could take on this role, whereas Italy, Germany and Spain should be the countries with the oldest population *(table 2-2)*.

Forecasting the quantitative trends of access to VET and the labour market for a period longer than 15 years (i.e. for the years 2010 and after) requires assumptions to be made about future fertility and, of course, about (net) migration. Calot et al. (1996) have projected future access to the population aged 20-59 years (WAP). Although the access rates include the immigration of older persons, the long-term trends are also applicable for future access to VET with a time delay of around five years.

The model calculation is based on Eurostat population forecasts distinguishing three scenarios: a baseline scenario with slightly rising fertility and migration, a "high scenario" with significantly rising fertility and life expectancy, and a high positive migration balance. A low scenario assumes decreasing fertility and migration.

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[11] Number of entries into WAP for 100 departures

Table 2-2: Population aged less than 20 years as percent of total population, EU 1995 - 2050

	1995	2000	2020	2050
EUR 15	23.9	23.1	21	19
B	24.1	23.7	22	21
DK	23.6	23.8	22	22
D	21.5	21.6	19	18
EL	24.4	22.5	22	20
E	25.0	21.9	20	18
F	26.1	25.4	23	21
IRL	33.9	31.0	25	21
I	21.5	20.0	19	17
L	23.8	24.8	22	22
NL	24.4	24.4	22	21
A	23.3	23.1	20	19
P	26.1	23.6	22	21
FIN	25.5	24.9	22	21
S	24.7	24.7	23	22
UK	25.3	25.4	22	21

Source: European Commission/Eurostat 1997
(1995: current figures; 2000-2050: baseline scenario)

The results indicate that access rates to the WAP are not equally distributed across the EU Member States. In order to stabilise the WAP, an annual access rate of 2.5% would be necessary. According to the baseline scenario, no EU country is likely to exceed this limit in the following decades; only Sweden and Denmark will come close to it after 2030. [12]

Demographic developments also affect training and qualification requirements in *qualitative* terms:

Companies will progressively face a new age pyramid of workers: older workers will account for a higher share than younger workers (European Commission 1997a). This may not only affect positions held in a firm and limit career opportunities for younger workers, but will also require appropriate forms of the production process, of technologies and of continuing training adapted to the abilities, skills and experience of older workers (Bullinger et al. 1993).

1.2 Participation in training and work

Whereas demography affects the overall number of age cohorts, their participation in education, training and work is dependent on individual abilities, preferences and decisions, taking into account capacity constraints in VET and the labour market.

Decisions for training and work reflect individual preferences and settings as well as expectations concerning future job prospects associated with the qualification obtained. Factors of influence on individual choice are, amongst other things, the social background, and the information and support given by parents, the vocational guidance, and others. Part Three will discuss those questions of choice and information in more detail.

Participation in education and training

For an empirical analysis of participation in education and training the demographic influence has to be eliminated. This is normally done by calculating age-specific participation rates. *Table 2-3* shows, for

Table 2-3: Age-specific participation rates in education and training*, EU 1970/71 and 1993/94
(% of population of same age)

	age: 16		age: 17		age: 18	
	1970	1994	1970	1994	1970	1994
B	66	*100*	53	*100*	39	87
DK	•	93	•	81	•	70
D	33	96	24	93	18	85
EL	*49*	*82*	*36*	*57*	*26*	58
E	•	80	•	73	•	61
F	45	96	32	92	22	84
FIN	•	96	•	92	•	83
IRL	•	94	•	84	•	82
I	47	•	38	•	32	•
L	42	•	29	•	22	•
NL	61	97	41	91	28	80
A	•	92	•	86	•	61
P	•	74	•	67	•	55
UK	42	87	26	74	17	53
EU	•	91	•	83	•	72

* ISCED levels 0-7; italics: estimated; • no data available
note that the education/training data attributed to ISCED are not fully comparable over time because of changes in delimitation

Source: Eurostat: Education and training, 1980, 1997

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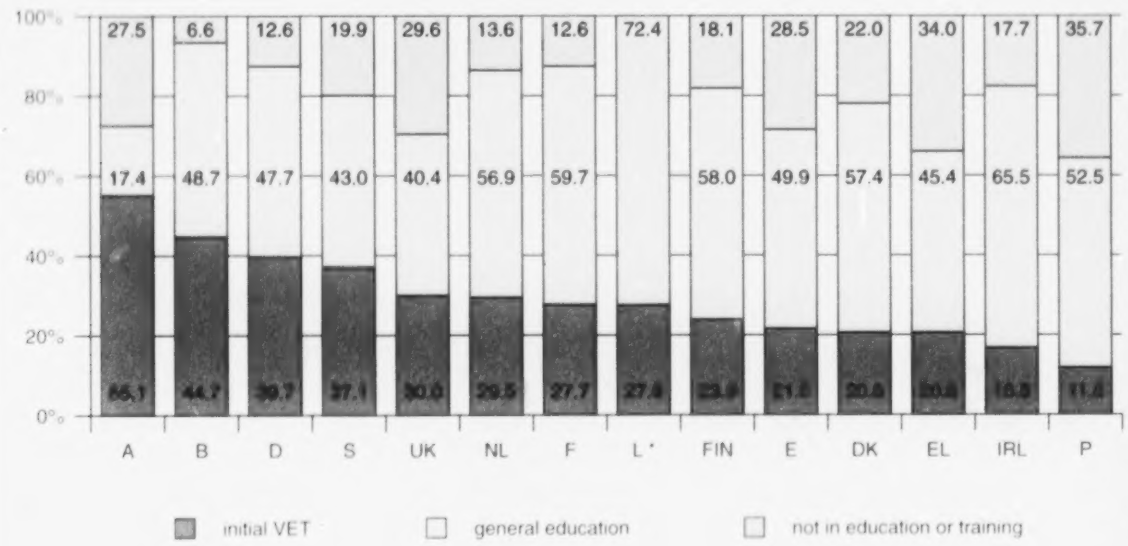
12) The results of the high scenario indicate, that a number of countries after 2030 will expect access rates to the WAP above 2.5% (DK, FIN, F, IRL, S, UK), others will come close to it. Countries where access rates will be significantly below 2% even in the high scenario, are D and I. In the low scenario, in the whole EU annually only 2% of the WAP will be replaced, four-fifths of the percentage necessary to secure a stable working age population.

Figure 2-5: Participation in education and initial training of the age group 15 - 19 years; EU 1993/94



Note: participation rates were calculated by single age years and partly estimated; data by age are not available for Italy.
* Distinction by age for "general education" and "not in education and training" not available for Luxembourg.
Countries are sorted by participation rates in initial VET

Sources: Eurostat: Education across the European Union 1996; European Commission/Eurostat/CEDEFOP: Key data 1997; own calculations

the period 1970-1994, the significant increase in participation rates in total education and training for three age groups.

Almost all 16-years-olds (somewhat less in E, EL and the UK) and between 70% and more than 90% of the 17-years-olds still undergo education and training courses - double or three times as many as in 1970. Similarly, among 18-year-olds, participation rates have increased from around 20-40% to 60%-85%. Here again, somewhat lower participation rates are observed in Greece, Portugal and the UK.

These figures refer to all education and training routes according to the ISCED classification (see annex). For the first time specific participation rates for *initial vocational training* have been calculated by European Commission, Eurostat and CEDEFOP (1997) within the publication on "Key Data on Vocational Training in the European Union". *Figure 2-5* illustrates participation rates for the age group of 15-19 years olds. In addition, it shows the participation rates for general training and for young people not participating in education and training.[13]

There are four countries with a significantly higher rate of participation in initial training: Austria, Belgium, Sweden and Germany. In all of these countries around 40% or more of the 15-19 year olds attend an initial training course. Participation rates of around 20% or less are found in Denmark, Greece, Ireland and Portugal.

On closer examination of the participation of males and females in initial training across the EU, it be-

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13) Participation rates were calculated as follows: The persons not in education and training are the difference between total population (age 15-19) and young people in education and training (ISCED 0-7) (Source: Eurostat: Education across the EU, 1997). By subtracting young people in initial VET (Source: European Commission/Eurostat/CEDEFOP 1997: Key data) from all people in education and training, the number of young people in general education is derived. Note that these figures indicate a rough picture only, due to the fact that a clear distinction between initial VET and general education and training is not always possible for all countries.

comes obvious that females have made up considerable ground: out of all training participants in the EU, 55% are men and 45% women. The proportion of females is significantly higher in Finland (55%) and Belgium (49%), and below average in The Netherlands (42%), the UK, Luxembourg and Italy (43%).

Labour-force participation

Labour-force participation denotes the percentage of people gainfully employed or looking for a job[14] as compared with the total population in working age. The participation in work is dependent on a variety of factors, such as family status, nationality, household situation, etc. The most important factors, however are sex, age and the level of qualification.

The following discussion will concentrate on the relations between the qualification and labour force participation of men and women. Recent OECD data (OECD 1996a, b) illustrate labour force[15] participation rates and the level of educational attainment of the population of 25 to 64 years of age.

Women's participation rates are in general lower than those of men. The lowest *total* participation rates (less than 50%) for women are found in Italy, Spain, Greece and Ireland, the highest (more than 70%) in Sweden, Finland, Norway, the USA and the UK (OECD 1996a).

The second observation is the significant positive correlation between participation rates and the level of qualification. *Figure 2-6* shows the strong correlation between educational attainment and labour force participation in EU countries, Norway and the USA.

In most countries, participation rates for women with upper secondary or higher levels of education exceed 60%, and for those with tertiary education, with some exceptions, as much as 80%.

Participation rates for males exceed in general 85%, and at the tertiary educational level as much as 90%. An exception are men with the lowest level of education, where participation rates range between 70% and 85% (except the USA and Ireland).

1.3 Demographic and social component

The declining number of young people would reduce the pressure on VET capacities only if the "social component" of VET participation remained unchanged or even falls. In fact, however, there have been significant changes in VET participation in the past. The increase in the social behaviour towards education and training was one of the main reasons that expectations of decreasing training and labour-market problems of young people as a result of smaller cohort sizes, were not met (OECD 1996c).

Participants in education and training

The actual number of students, trainees and pupils in education and training is a result of demographic change and of changes in the participation rates of individuals. Both components - demographic and social - may change in different directions, thus reinforcing or compensating for each other in respect to the number of participants.

Demographic and social component

The distinction between both components in determining past and future developments of the number of participants in education and training or in the labour force is an important tool of analysis. Normally, decomposition methods (e.g. shift-share) or econometric approaches are used.

The demographic component indicates the number of students or of the working population to be expected if participation in education, training or work were not to change, but is only due to changes in the size and structure of age cohorts.

The social component reflects the changes induced by the training or work behaviour of people (measured by participation rates), and restricted by the available training places or jobs. For its measurement the demographic factor is kept constant.

In order to illustrate the size of both the demographic and social components, a calculation of the two components is given in *table 2-4* for three age groups and several EU countries in 1970 and 1994. However, no time series was available on age-specific developments. The calculation includes only those countries where data by single age years of

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14) In most cases those people are registered as unemployed. A broader definition includes those people who are not officially unemployed but would enter a job if offered to them ("hidden reserve").

15) Active population, either employed or unemployed. Note that the European Commission/Eurostat/CEDEFOP (1997) also publish participation rates by educational levels for 1995. They refer, however, to employed persons aged 30-59 years and are not broken down by gender.

pupils and population were reported for both years.[16]

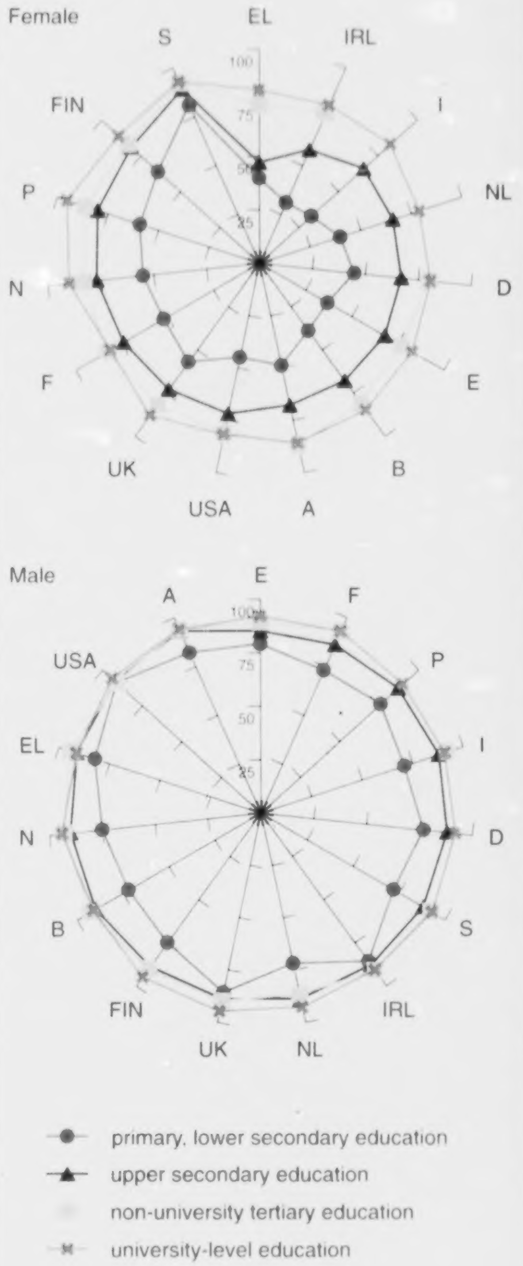
In all countries under consideration it was solely the social component that led to the substantial increase in VET participants. Except for Germany and Ireland, the demographic component was negative but was more than compensated for by the social component. In Germany and Ireland the effects of both components were cumulative.

> Since the distinction between demography and social factors of influence is an essential tool for educational planning, more research should be done on these issues focusing, however, not only on these two components. Research should also explain divergent developments, that is analyse the reasons for a change in the social factor, for example: changing attractiveness of a certain education or training route and the reasons for this; impacts of capacity constraints on participation in education and training; future development of the components.

An example of an analysis of this kind is the Educational Accounting System (BGR)[17] of the IAB implemented at the end of the 1980s.[18] The BGR is an annual statistical reporting system which calculates in a comprehensive and consistent way the stocks, flows and transitions within education and training as well as in the labour market and non-employment. The different routes in education and training and the positions in the labour market are defined as "accounts" with initial and final stocks, inflows and outflows and their origins or destinations.

The basis of the Educational Accounting System is official statistics and additional data sources on pupils, apprentices, students, employed and unemployed, and people not in employment. The accounts are broken down by single age years and sex, and are calculated annually. On the basis of an optimisation model[19] the transitions between all accounts and for single cohorts are estimated over time.

Figure 2-6: Labour force participation rates 1994 by educational level and gender
(population 25-64 years; in %)



Countries sorted by labour force participation rates of people with completed upper secondary education (ISCED 3); note that for some countries data are missing
Source: OECD: Education at a glance

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16) Due to data restrictions and available time it was not possible to carry out a breakdown in a time series.

17) "Bildungsgesamtrechnung"

18) Cf. for further information: Tessaring et al. (1990); Fischer et al. (1993).

19) ENTROPY model (cf. Blien/Graef 1989; Blien/Tessaring 1992).

Table 2-4: Demographic and social component in the development of education and training 1970/1994; selected EU countries

	dimension	B	DK	D	F	IRL	NL	UK
		age: 16						
pupils 1970	1000	97.7	32.8	271.1	373.7	21.4	135.0	317.6
participation rate[1]	%	66.2	45.1	33.3	45.0	37.9	60.5	41.6
demographic component 1970-94[2]	1000	-16.9	-4.2	10.6	-32.6	4.0	-25.6	-46.6
social component 1970-94[3]	1000	45.6	30.4	532.7	387.8	37.3	66.8	296.6
pupils 1994	1000	126.4	59.0	814.4	728.9	62.7	176.2	567.6
participation rate[1]	%	100[4]	93.1	96.3	96.1	93.4	97.5	87.1
		age: 17						
pupils 1970	1000	76.4	22.7	186.9	259.0	10.9	91.7	201.8
participation rate[1]	%	52.7	30.9	23.7	31.6	20.1	41.3	26.1
demographic component 1970-94[2]	1000	-12.6	-2.1	11.6	-25.6	2.2	-15.3	-24.6
social component 1970-94[3]	1000	59.0	33.6	576.5	447.6	41.6	91.3	322.4
pupils 1994	1000	122.8	54.2	775.0	681.0	54.7	167.7	499.6
participation rate[1]	%	100[4]	81.1	92.5	92.2	84.0	90.6	73.6
		age: 18						
pupils 1970	1000	56.4	16.8	148.2	184.5	5.8	63.0	134.6
participation rate[1]	%	38.9	22.8	18.4	22.1	11.0	28.1	17.7
demographic component 1970-94[2]	1000	-9.6	0.0	2.8	-15.3	0.9	-10.1	-10.0
social component 1970-94[3]	1000	57.6	34.7	545.5	474.6	43.4	97.3	246.6
pupils 1994	1000	104.4	51.5	696.5	643.8	50.1	150.2	371.2
participation rate[1]	%	86.8	70.0	84.9	84.1	81.7	79.8	52.7

1) pupils in % of total population with same age;
2) variation of pupils 1970-1994 expected by demographic reasons only (constant participation rate 1970);
3) variation of pupils due to increase in participation rate and without demographic induced numbers;
4) participation rates in Belgium exceed 100% for unknown reasons
Slight differences due to rounding of numbers

Reading example for demographic and social component: Belgium, 18 years olds:
In 1970 the numbers of pupils (age: 18) totalled to 56 400 or 38.9% of the 18-years old population. If this participation rate would have remained constant, the number of pupils to be expected in 1994 by demographic reasons only would have decreased by 9 600. The participation rate however increased and the number of pupils due to social behaviour changed by +57 600. Taking both components together (net change), pupils' number increased by (-9 600 + 57 600) = 48 000 and the total number of pupils thus increased from 56 400 (1970) to (56 400 + 48 000) = 104 400 in 1994 or 86.8% of the 18-years old population in 1994.

Source: own calculations based on Eurostat data
Note: other countries could not be included due to missing data

Amongst others, the BGR allows for a breakdown of the demographic and social component as well as for analyses of the transition process (Tessaring/Reinberg/Fischer 1993). The following example for the "dual system" of apprenticeship training in (West) Germany illustrates the development of the two components *(figure 2-7)*.

After an increase in apprenticeship numbers up to the beginning of the 1980s (due to the baby-boom cohorts born in the 1960s), the demographic component[20] dropped sharply during the 1980s and has been recovering slightly in recent years. On the other hand, the social component which was negative until 1983, increased in subsequent years.

At the end of the eighties, however, the social component fell once again and induced - together with the low demographic change - a sharp decline in overall apprentice numbers. In 1994, the number of

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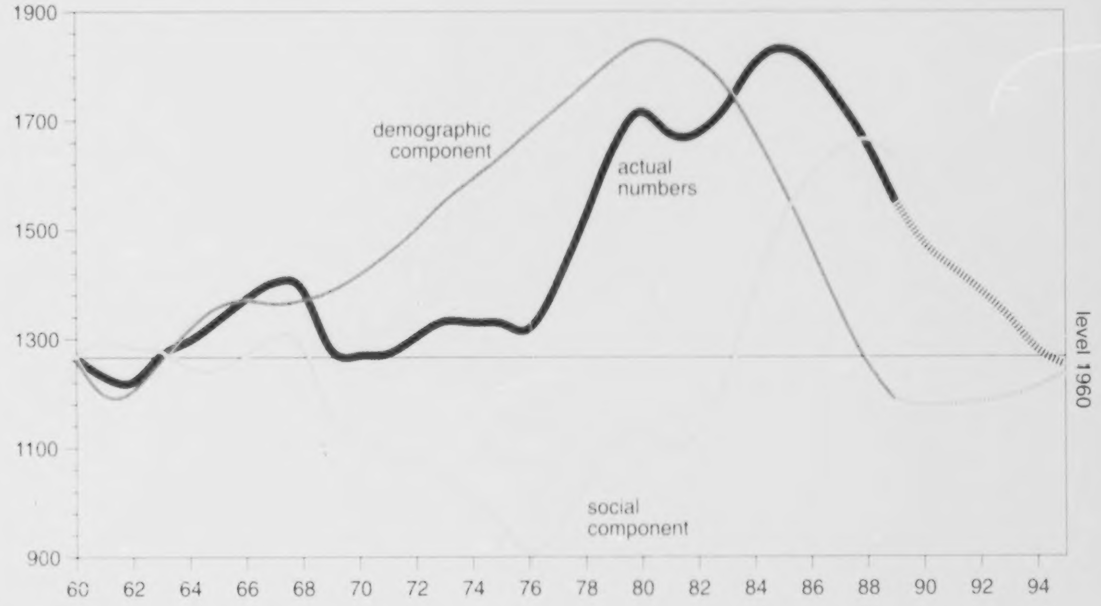
20) The results for single age cohorts are aggregated here

Figure 2-7: Demographic and social component - Apprentices in West-Germany 1960 - 1995[1] (1000)



1) demographic and social component 1990-95 estimated
Note: The demographic component indicates the number of apprentices to be expected if participation rates in apprenticeship training (by single age years and gender) would had remained unchanged after 1960. The social component is the difference between real and demographic numbers.
Source: Educational Accounts of the Institut fur Arbeitsmarkt- und Berufsforschung

apprentices was the same as in 1960. For demographic reasons the decrease has slackened in recent years and has even been followed by a slight increase.

It should be added that the BGR formed the basis of a scenario for the future development of the demographic and social component at all levels of education and training (Reinberg et al. 1995). The projection used population forecasts and alternative developments of participation rates and illustrated, among other things, that future educational expansion in quantitative terms will come up against "natural limits" drawn by the demographic decline of age cohorts.

Active population

In a similar way, the European Commission (1997a) has calculated the demographic and social[21] components for the *active population*[22] and the period 1985 - 2015[23] (in millions):

labour force supply	1985 -1995	1995 -2005	2005 -2015
demographic comp.	+ 9.6	+ 3.8	- 3.4
social component	- 0.2	+ 3.1	+ 1.25
active population	+ 9.4	+ 6.9	- 2.15

The demographic pressure on the labour market due to the increase in the labour supply over the past decade will be reduced by demographic decline up to the year 2005. After 2005, the demographic component will become negative and will be compensated for only partly by the social component. This may lead to a reduction in tensions in the labour market.

Prospects

In respect of the future development of the population of working age (WAP) and the prospects for the labour market and unemployment, induced by changes in the educational and qualification levels of manpower supply, reverse developments are to be expected.

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21) The European Commission defines the social component as "behavioural component"
22) Employed and unemployed people.
23) 1985-1995: EUR 12 (without new German Lander); after 1995: EUR 15

On the one hand, future WAP may be reduced by smaller age cohorts entering the labour market. Another reducing factor may be the longer stay in education and training due to the behavioural effect of individuals achieving higher qualifications.

These WAP-reducing effects, however, may be (partly) offset, among other things,

- by growing labour force participation, in particular among *women*, amongst other things as a result of higher qualifications;
- by a *generally* growing labour force participation over time;
- in the short and medium term, by the ageing of the labour force, since labour force participation rates are positively correlated with age (they tend to increase up to the age groups of around 45-50 years);
- by policy measures to limit early retirement and to raise the retirement age.

> It would be an important subject for research to analyse the different effects of labour force reducing and increasing factors. Particular attention should be drawn to the interrelation between increasing levels of education and training of the potential labour-force (especially women) and their impacts on labour force participation.

1.4 Qualification of the population and labour force

The growing level of qualification of the population and the labour force is the long-term result of increasing participation of younger people in education and training.

The rise in the level of qualification[24] throughout Europe and other industrialised countries is general throughout the population. However, the demographic pattern reveals that each generation has achieved a higher level of education and training than the previous one, due to better opportunities and to higher participation in education and training (Mallet 1996; Mallet et al. 1997).

Educational attainment of the population

Across European countries, the rise in the level of qualification has different patterns and is influenced by the history of the education and training system. Major disparities can be found relating to the relative weight of education on the one hand and training on the other, reflecting different organisational and institutional arrangements of the education and training systems. Although prolonged education and training is a general and continuous trend in all EU countries, it is neither completely homogenous nor linear in time and shows specific national accelerations, in particular in recent periods (Mallet et al. 1997).

These trends can be illustrated by the educational attainment of the adult population using OECD data (OECD 1996a) and by a comparison of the educational attainment of different age groups, using Eurostat data (European Commission et al. 1997j).

Although both data sources differ in delimitation and data base, they confirm the statements made at the beginning. Despite the institutional differences between countries, a common goal which all VET systems share is to achieve an efficient distribution of skill levels amongst workers, with a high proportion classed as skilled workers, and a low number of workers with few, or no skills *(table 2-5)*.

Regarding upper secondary education (ISCED 3), which includes intermediate VET levels, the national differences according to specific education and training systems[25] become obvious.

If one defines three groups of OECD countries, those with a share higher than 50% are: D, CH, A, UK, USA, N and F. To the medium range - with shares between 30% and 49% - belong: S, FIN, DK, NL. The other countries have a share of lower than 30%.

The educational attainment (ISCED 3 or more) of the population illustrated in *figure 2-8* shows that there is a continuous decline in the qualification level

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[24] In the follow, the term "qualification" is defined as the completed level of formal education and training.

[25] and to the qualification level of migrants. Although the number of migrants in EU countries is not speculative for some countries it can be shown that the educational level of migrants born in the EU is on average higher than that of migrants born in non-EU countries (cf. Part Five).

Table 2-5: Educational attainment of population 25-64 years of age, 1994 (%)[1]

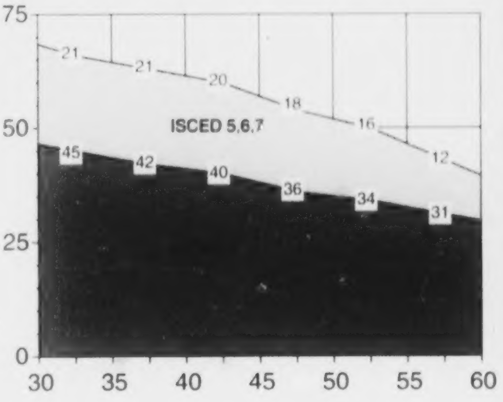
	primary + lower second. ed. ISCED 1+2	upper secondary education ISCED 3	non-university tertiary education ISCED 5	university-level education ISCED 6+7	total
B	51	27	12	10	100
CDN	26	28	29	17	100
CH	18	61	13	8	100
DK	40	40	6	14	100
D	16	62	10	13	100
E	74	11	4	11	100
EL	55	27	6	12	100
FIN	36	44	9	11	100
F	33	50	8	9	100
IRL	55	27	10	9	100
I	67	26	-	8	100
NL	40	38	-	21	100
N	19	53	11	16	100
A	32	60	2	6	100
P	81	8	3	7	100
S	28	46	14	12	100
UK	26	54	9	12	100
USA	15	53	8	24	100

1) highest completed level (ISCED); Source: OECD: Education at a glance 1996

from younger to older age groups. Whereas the share of younger people having achieved a qualification level of upper secondary or higher education is approaching 70 %, the share for the older population was around 40%. Although these patterns are different across EU countries, it becomes obvious that the increase in the qualification level of the European populations and workforces is only a matter of time.

However, a comparative study across 13 countries (USA, D-West, NL, S, UK, I, CH, TAI, JAP, PL, H, CS, ISR) revealed that - except in NL and S - the educational opportunities of people with lower social origin remained on the whole unchanged - in spite of their increasing participation in education and training (Blossfeld/Shavit 1993). The authors even conclude that the educational expansion was a decisive precondition for the continuous inequality of educational opportunities related to social origin.

Figure 2-8: Educational attainment of the EU population by age groups 1995 (%)



Source: European Commission/Eurostat/CEDEFOP: Key data 1997

Skill profiles of the labour force

The performance of different training systems in terms of the labour market may be measured in various ways. The most direct of these is the emerging skills profile of the workforce. Other measures of training success relate to employment prospects and the wages of skilled workers, relative to those without training. *Table 2-6* shows the qualification struc-

Table 2-6: Educational attainment of the labour force and non-active population, EUR 15, 1995 (25-59 years of age), in %

ISCED levels	employed	unemployed	non-active	total
		male		
tertiary education[1]	22.4	13.6	10.1	20.5
upper secondary education[2]	42.3	35.2	35.8	41.1
primary, lower sec. education[3]	34.4	49.9	51.6	37.3
total[4]	100.0	100.0	100.0	100.0
		female		
tertiary education[1]	23.0	14.3	7.1	16.9
upper secondary education[2]	41.9	38.8	29.4	37.3
primary, lower sec. education[3]	34.1	45.7	61.9	44.6
total[4]	100.0	100.0	100.0	100.0
		male and female		
tertiary education[1]	22.7	14.0	7.8	18.7
upper secondary education[2]	42.1	37.0	30.9	39.2
primary, lower sec. education[3]	34.3	47.9	59.6	41.0
total[4]	100.0	100.0	100.4	100.0

1) ISCED 5-7; 2) ISCED 3; 3) ISCED 1+2; 4) incl. not stated
Source: Eurostat (1996f): Erhebung über Arbeitskräfte. Ergebnisse 1995

ture (ISCED levels) of employed, unemployed and non-active people in the European Union (EUR 15) in 1995.

The educational structure of employed and unemployed people is rather different: almost two-thirds of the employed (male and female) have completed upper secondary or higher level education and training (ISCED 3 or more). In contrast, only half of the unemployed and 40% of the non-active population have obtained intermediate or higher qualifications.

Concerning the differences by gender, the qualification structure of employed males and females is rather similar. Unemployed, and to a much greater extent non-active women, however, have a significantly higher share of lower educational levels than men.

The deviations between different countries are considerable (Eurostat: Education across the EU, 1996). Countries with a proportion of lower educated employed people significantly above the EU average (34%, male + female) are P (73%), E (61%), I (54%), EL (50%), L (49%), IRL and the UK (both 41%). The proportion of lower qualifications in all other countries is at or below average. Out of the latter, a proportion of less than 20% is found in DK (15%), NL (14.5%) and D (12.5%). But also in these countries the above-mentioned differences in the educational level of unemployed and women are evident.

> However, countries are improving their educational structure. This was illustrated in *figure 2-8*: The qualification level of younger age cohorts - valid for all countries - is improving substantially. It is a question of time and of the cohort process until those countries with a lower qualification level will have come closer to the prevailing qualification structures in the EU.

A comparatively large body of research literature examines skill profiles and employment prospects in European and other OECD countries.

Despite the institutional differences between countries, a common goal which all VET systems share is to achieve an efficient distribution between skill levels amongst workers, with a high proportion classed as skilled workers, and a low number of workers with few or no skills.[26]

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[26] *The following sections are based on the contribution of J. Lynch, C. [illegible] and R. Ross (1997): Employment structures and labour market aspects related to VET.*

At the aggregate level, it is possible to make direct comparisons between the achievements of different countries in skilling their workforces, provided a common basis for comparison can be identified. As part of the British Government's Skills Audit, Green/Steedman (1997) set out a benchmarking method to allow such comparisons to be made. This is based on qualification levels, and draws on the detailed study of curricula in different countries. They distinguish four separate skill levels:

- degree (high skills),
- level three (higher intermediate skills),
- level two (lower intermediate skills) and
- below level two (low or no skills).

Broadly speaking, national targets aim to move more of the workforce from below level two up to the level three skill category. In France the target is for 80% of young people to reach this skill level, for England and Wales the target is 60% of young people by the year 2000.

On the basis of these definitions, Green/Steedman go on to make international comparisons of workforce skill levels. In terms of targets for a high proportion of level 3 skills amongst the young, Germany had around 70% of 25-28 years olds qualified to this level[27] in 1993. France and England in 1994 both had well under 20% qualifying at this level. Similarly, Germany had the lowest proportion of the cohort below level 2 - around 10%, compared to around 20% in France and 45% percent in the UK. It should be noted, however, that the position of both France and England has improved considerably from a decade ago, when almost 40% percent of the French cohort and 60% percent in the UK were below level 2.

At the aggregate level, then, it appears that Britain and France are lagging behind Germany in providing higher skilled workers. However, an issue equally as important is how well the skills profile in each country matches the requirements of employers. This question is more difficult to answer precisely. Information about skill matching can only be accurately gained by analysing unemployment and vacancies and/or by interviewing employers about their skill requirements and comparing these with the skills of employees and job applicants. Some of these aspects will be discussed in the following chapters.

However, the "low-skill-equilibrium" (such as in the UK) and "high-skill-equilibrium" (such as in D) observed at the macro level cannot always be proved in reality. Backes-Gellner (1996) shows in a comparative study that there are large numbers of enterprises in the UK which provide exemplary initial and continuing training. On the other hand, there are a number of enterprises in D which do not engage at all in vocational training. Similar findings are confirmed for France and Luxembourg.[28]

> The reason for different company strategies are that the actual potentials of qualifications provided by companies are determined by their strategic decisions on markets and production. The ways in which qualification potentials are being provided by companies is systematically different from country to country. A restriction on mere formal qualifications (as done in macro-analyses) would thus suggest those misleading conclusions mentioned above.

1.5 Conclusions

Demographic change, coupled with the ageing of the working age population and a dwindling renewal by young people with up-to-date skills will have a number of consequences of major importance for VET systems too.

- Given the increasing old-age dependency, the financial scope for public investment in education and training will in future be somewhat smaller. VET policy will have to compete increasingly with other public expenditure. The extent to which it will succeed in doing so depends crucially on whether it manages to demonstrate the value of education, training and qualification for economic progress and for social cohesion.
- The ageing of the population requires a response from VET since there will be an increasing demand for skilled labour to deal with the specific

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[27] This age group is chosen as it is the age by which most initial training should have been completed in all countries studied. However, there are certain caveats to this, in Germany some degrees may not have been completed by this time. Furthermore, this choice of cohort will not pick up the effects of the most recent policy changes, for example in the UK. However, like for like comparison of a younger cohort was not possible.

[28] The analysis is based on an international set of company data ("QUIPPE").

needs of older people. But older people, too, in working life, whose know-how and skills have to be constantly updated, need further training and employment which is adapted to their specific experience, skills and expectations. Hence, curricula and learning methods must be reformed to suit their needs.

- The shrinking working age population can be compensated for in the long term at least partially by the greater involvement of women in training and employment. This means that the socio-political demands for equal rights for women are concomitant with economic and labour-market needs.

- The ageing of the labour force in companies and public administrations raises the problem that older workers, in some cases in higher positions, are constituting, more than was the case in the past, obstacles to the career advancement of younger people. This brings with it the risk of a drop in motivation and performance not just for the individual company but also for the entire economy. This could also prove disadvantageous to the willingness of young people to take part in demanding education and training routes in the future. What are needed are creative and flexible solutions, e.g. job rotation, increased group work with a greater degree of responsibility, realistic staff development programmes and financial incentives.

2 Changing patterns on the demand side

2.1 Economies under change

The processes of European integration, the disruption in labour markets and the transformation of economies mark ongoing structural changes of the socio-economic framework. The underlying forces are usually identified as the globalisation of markets, restructuring of economies and enterprises, increasing international competition and, above all, high and persistent unemployment.

On the way towards a post-industrial society?

Among the various theories to explain structural change, there are basically two that have apparently been confirmed so far:

- The Schumpeterian theory of economic cycles (Schumpeter 1954, 1961) and, based on it, the theory of economic evolution (Nelson/Winter 1982) explicitly stress the role of innovation and of pioneer entrepreneurship as the main forces for the economic progress of a country.

- And the theories of a post-industrial society (Touraine 1969, Bell 1973, Gershuny 1978), based on Fourastiés theory of the Three Sectors (Fourastié 1949), predict a long-term increase in production and employment in the services sectors.

There is strong evidence for both theories:

1. The "Meta-study" carried out for Germany by renowned research institutes during the 1980s concluded that innovation prevents growth in unemployment by improving the competitiveness of firms. Increased unemployment growth would be unavoidable, however, in case of a lower level of innovation. The same has been confirmed by numerous studies on innovative and new technologies (see below).

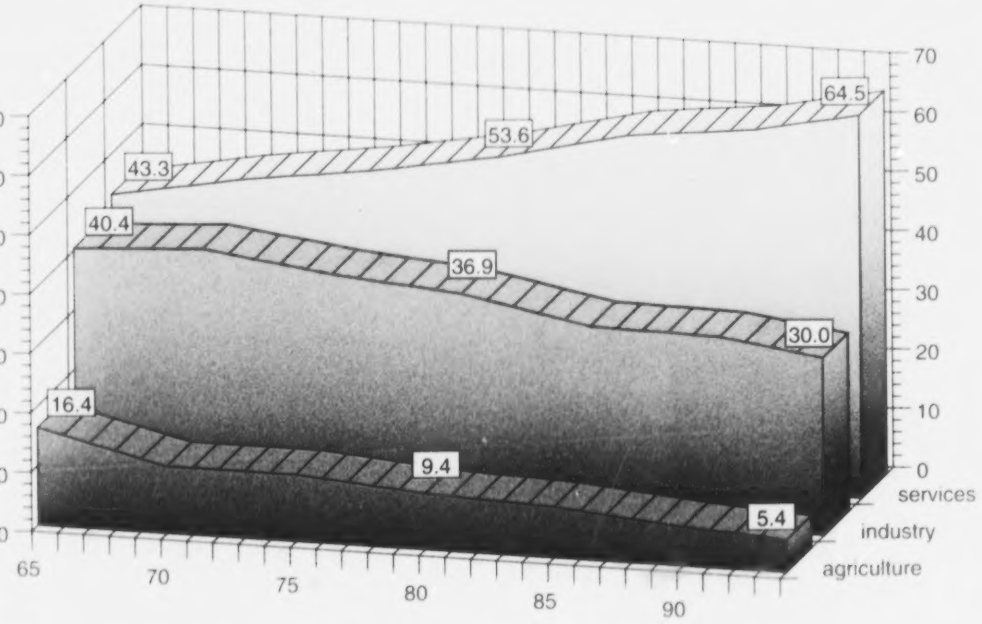
2. The service sector's share of employment has significantly increased in industrialised countries *(figure 2-9)*. Moreover, services were the only sectors with employment gains in most countries and thus give rise to optimistic expectations for the future.

When speaking of services, it should be noted that they refer not only to "sectors" as a classification category. A substantial and increasing number of jobs, even in manufacturing, have a service character. They are related to, among other things, management, organisation, accounting, data processing, research and development, transport, communication, marketing and sales promotion.

Regarding the character and economic power of services, the view that most services are dependent on material production is increasingly discussed. Thus, in West Germany, the private service sectors have surpassed the manufacturing sector as regards the value added, labour productivity, the degree of modernisation of plant and equipment, and their share of employment (Tessaring 1996a).

However, the optimism of the advocates of a post-industrial society regarding the generation of

Figure 2-9: Sectoral employment trends 1965-94 (%)[1]



1) 1965-70: EUR 10; 1970-1990: EUR 12; 1994: EUR 15. Civilian employment, annual averages; partly estimated by Eurostat 1994; data for Austria not available

Note that after 1970 EUR 12 figures for agriculture are higher, and for industry and services lower than the trend for EUR10; EUR 15 figures 1994 change the trend for EUR 12 only marginally; slight differences by rounding

Source: EUROSTAT "Employment and unemployment", various issues

Comparison	USA			Japan		
	1965	1980	1994	1965	1980	1994
Agriculture	6.3	3.6	2.9	23.5	10.4	5.8
Industry	35.5	30.5	24.0	32.4	35.3	34.0
Services	58.2	65.9	73.1	44.1	54.2	59.8

wealth, humanisation of work, prospering education and culture, rising qualifications and avoidance of unemployment[29], has not on the whole been realised so far. Though services were, in quantitative terms, the main providers of new jobs in the past, they could not prevent the high and persistent level of unemployment and in particular long-term unemployment.

Zinn (1993) even anticipates a "tertiary crisis", caused by structural unemployment and its negative impact on wages and demand. Moreover, in his view, essential services are approaching saturation, and alternative (new) services, in particular luxury services, are limited by the wage levels of consumers.

Nevertheless, as OECD analyses reveal, of all the sectors of the economy, services are the heaviest users of technology (Papaconstantinou 1996, 1997) and are the most prosperous sectors in terms of growth and employment. The OECD points out, in particular in its 'jobs studies' (OECD 1994f, 1995h, 1996g, h), that in the past job losses have occurred mainly in the low-technology, labour-intensive part of manufacturing, whereas the main sectors for employment growth have been the services and a few technologically sophisticated and science-based manufacturing industries. It is the knowledge-intensive sectors which have been expanding their

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29) Fourastié even expected the way towards a "tertiary civilisation" with qualified, well paid services and social security contributing to the mental, cultural and moral development of mankind.

employment more rapidly than the rest of the economy (Papaconstantinou 1995).

It must be repeated, however, that they could not fully compensate for the substantial job losses in the economies of most industrial countries.

Information and knowledge-based economies

A related aspect is the growing importance of information in all spheres of work and life. "A key determinant of the economic system is the capacity to effectively and efficiently distribute knowledge. This will in part depend on the openness of the system and the form of information, as the essential commodity of the knowledge-based economy..." (Dumort/Dryden 1997, p. 16).

The term "information society" denotes the economic and social importance of the creation, processing and transfer of information. In contrast to the production of material goods, the importance of knowledge processing and of the immaterial pattern of modern production processes is increasing. The arguments for the "information society" are often based on the theorem of the "post-industrial society."

The importance of information is not doubted today, in particular its contribution to the economic output of the global economy, which was 5.6% in 1993 and growing (Minges/Kelly 1997).

> **However, "one paradox in understanding the Information Society is that, although many agree that information is increasingly important for economies, we know so little about it. ... Estimates suggest that information processing functions are a large component of economic activity. In Japan, information activities are estimated to contribute 41 per cent of economic output.[30] This represents a significant transition from the production of commodities to a more nebulous, informatized economy, a movement from the tangible to the intangible." (Minges/Kelly 1997, p. 240)**

In addition, critics argue that political institutions often hold a too technology-related view of information, with priority on information and communication technologies (ICTs) as a primary precondition for the creation of an information structure. They point out that the basic redesign of the whole of society requires the creation of social preconditions and should not be restricted to technologies only (Boes et al. 1995).

Other critics stress the negative impacts of information overload for individuals. Increasing overdoses of media, infinite supplies of entertainment and escape, second or third-hand life experience might replace the access to reality (Fabris/Hummel/Luger 1985). Also to be mentioned here are those who warn about the risks and temptations of the information society and some related paradoxes: "Total information" tends to lead to a less contextual understanding, to problems of quality assessment and orientation and to undermine trust. More and more information could make societies less rationally governable, as is shown by examples from the UK and USA (Tsoukas 1997).

The growing volume of communication and cooperation via the Internet can lead to the nation state losing more and more of its own control possibilities. Geographical borders, which kept a country together up to now, are losing importance. Time limits on work and markets are becoming less important: it is no longer relevant where something is produced and sold and the value of the actual physical production process is also dwindling. Only ideas and know-how are expected to grow in value.

In a resolution the European Parliament (1994) states: "[The European Parliament] shares the concern of those who consider that, if no account is taken of the social, cultural and linguistic aspects of the information society such as it is emerging at international level, if strict coordination is not instituted in the field of scientific research and technological development and if a 'contents strategy' allowing the current challenges to be met is not defined within the audio-visual sector, the hopes raised may well prove to be the results of excessive euphoria rather than the outcome of a serious assessment of existing potential." (p. 38)

Concerning the impacts of information on employment, a distinction should be made between the "users of information" and the "producers of information". The use of information is not restricted to certain sectors or occupations but includes all private, economic and social activities.

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30) Ministry of Posts and Telecommunications, 1987, Communications in Japan White Paper, Tokyo (cit. in Minges/Kelly 1997, p. 240)

Analyses of economic activities and concrete policies directed towards employment creation should consider that economic activities concerning the "production of information", whether by hardware (e.g. information technology, telecommmunication equipment etc.) or by software (information services, broadcasting, media etc.) are largely included in "traditional" industrial or service sectors. However, "most national and international statistics fail to appropriately cover these sectors. A further complication is that there are no precise definitions of what constitutes the information society. Should it include both services and equipment? Should it include non-electronic information creation and distribution industries such as publishing and postal services?" (Minges/Kelly 1997, p. 241).

The definition of a new "information industry" in terms of sectoral classifications may thus be misleading or incomplete. Efforts are being made by a number of OECD countries (Canada, Japan) and the European Union to improve the measurement of "information sectors" and their economic impacts (Minges/Kelly 1997).

As to the employment effects of the "information sectors", which are often enthusiastically hoped for as a means to overcome unemployment, some more realistic research results should not be concealed. Minges/Kelly (1997) note that there are significant job losses in the capital-intensive information and communication companies world-wide: employment here has declined by 2.2% since 1992/93. Although new operators and services provide employment, this does not offset the large cuts made by the previously state-protected establishments.

> Similarly, Dumort/Dryden (1997) and others point out that the positive employment effects of the "information society" and in particular of ICTs are highly uncertain. "Job creation may be frustrated by the fact that the adoption of ICT technologies may only raise the productivity of high-wage, high-skill workers and render the low-wage, low-skill workers increasingly redundant, therefore reinforcing the very effect that such a jobs policy initially set out to reverse." (Hulton 1997, p. 17 - summary).

Dumort/Riché-Magnier (1997) state that there is no guarantee that the benefits of telecommunication liberalisation and increased competitiveness will compensate for the negative direct impacts of rationalisation and of increases in labour productivity achieved mainly through the substitution of labour with capital in the former telecom monopolies.

New technologies and work organisation[1]

The way towards post-industrial, information-based and knowledge-based economies is accompanied by the rapid spread of new technologies and by new forms of work organisation and labour division. In the first and second stages of industrialisation, mechanisation and automation of manual work went in parallel with a strict division of work (Taylorism/Fordism) and resulted, on the one hand, in the alienation and polarisation of work, but on the other hand also in greater wealth and social security for the working classes.

Business process re-engineering

Tayloristic and industry-related systems of production and work in many countries are apparently being replaced by "new production concepts" or "systemic rationalisation" aiming at a vertical integration of all production processes and a new division and organisation of work within and beyond enterprises. The main aims are to increase productivity, innovation and competitiveness. These activities of "business process re-engineering" (BPR) also imply changing demands on the competencies and skills of workers when taking over a broader variety of tasks and greater responsibilities.

> The implementation of new strategies of production and work organisation imposes contradictory elements, however. On the one hand they promise more holistic and self-reliant work and greater worker participation in planning and controlling the production process. On the other hand they may pose risks for work and employment. Although several studies indicate that new technologies and work organisation cannot be held responsible for high unemployment,[2] they also emphasise substantial job displacement, uncertainty and job insecurity and ever growing requirements posed on workers.

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(1) *This chapter is in its major parts based on the contribution of G. Dybowski (1997): New technologies and forms of work organisation. Impact on vocational education and training.*

(2) But as we have seen, whose contribution to employment growth is discussed controversially, either.

Strategies of modernisation

Since the early 1990s enterprises in industrialised countries are in a process of restructuring. Aim is to increase competitiveness by cost reduction, by improving quality and by shortening innovation cycles. In contrast to previous modernisation activities the new strategies are not only focused on new techniques, but also on a systemic restructuring of the whole value adding process by vertical integration.

According to Little (1996) and INFAS Sozialforschung (1996)[33], the impacts of information and ICTs[34] - for users as well as for producers - are induced by changing strategies of firms in order to raise productivity and competitiveness and to make the most efficient use of resources, incl. human resources.

For that purpose a set of measures is being taken, such as

- new definition of the relations between relatively independent company units;
- innovation of products and production processes;
- ecological production and improving of working conditions;
- flattening of hierarchies and institutionalisation of group-working;
- changing qualification requirements and continuing on-the-job training;
- outsourcing and out-contracting of non-core activities;
- spatial re-localisation of production and employment (locational flexibility of firms);
- fluent demarcations and strategic alliances (e.g. production networks) between several companies in the value-adding chain;
- orientation towards the customer and connecting firms with their social and political environment.

Based on new and interlinked information and communication technologies, the modern principles underlying the organisation and regulation of production bring about changing patterns of work and human resource utilisation - apart from the question of their net employment effects.

> **However, it becomes obvious that there is no uniform approach to restructuring production and work organisation across countries. A number of empirical studies point out that the "European model" of production management implies more responsibility for workers and working groups, less hierarchy and more participation, compared, for example, to the approaches prevailing in the USA or Japan (Dybowski 1997).**

Although those general characteristics are rather heterogeneous with regard to countries, regions, sectors and firms, and although analyses of the impacts on the skill needs of workers have to consider country-specific patterns of training, the new challenges are supposed to lead to convergent standards of qualification and performance.

Based on several case studies[35], Dybowski (1997) states that levels of technology in European countries are converging, due to the generalisation of knowledge and the globalisation of markets. Enterprises are increasingly forced to focus on the needs of their customers, and to produce goods of a higher quality with shorter delivery times and on schedule.

Related strategies caused a re-shaping of the production process. Firms are creating smaller and distinguishable "manufacturing isles" in order to replace tayloristic work principles with flexible and qualified team-working. The aims of the restructuring process are to reduce machining times significantly, to cut expenses for operations scheduling and CNC-programming, and to facilitate the regulation of production.

In this process, on the one hand, former vertically structured and hierarchically organised enterprise functions are being disintegrated and made partly independent. On the other hand, new monitoring and

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33) These strategies are result of a broad enquiry among German firms, done by ZEW 1993 (cit. in infas 1996). We assume that they are likely to apply also for most firms in other industrialised countries.

34) Little denotes them as "TIME" sectors (Telecommunication, Information Technology, Media, Electronics).

35) The contribution of Dybowski (1997) refers to case studies of German automobile manufacturing and of Dutch chemical enterprises.

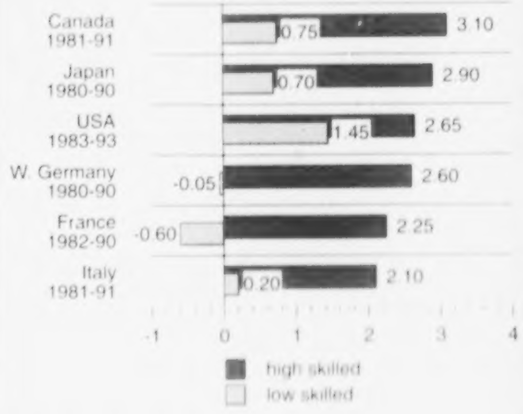
By global competition, these different approaches are changing. Firms in English-speaking countries that relied heavily on external flexibility are paying more attention to developing internal human resources and organisational capacities. In other countries, firms that achieved flexibility through internal, consensus based development of specific skills turn outwards to external markets: thus, for example, the percentage of part-time workers and temporary workers increases, and tenure drops.

2.2 The skill-labour nexus[37]

For a long time, and apparently to an increasing extent in recent years, labour markets have been undergoing significant changes in skill requirements on the demand side. Technical progress has placed new skill requirements on the workforces of developed countries: an ever-increasing level of automation in factories not only reduces the demand for low and semi-skilled workers, but also places a requirement on the workforce to have increased levels of expertise in the operating of machinery and the whole production process as well as in demanding service jobs.

As a consequence, industrialised countries have been facing an important upward evolution in their job structure: in most OECD countries, employment and the share of high-skill jobs have been increasing much faster during the eighties than for unskilled labour *(figure 2-10)*.

Figure 2-10: Employment growth[1] of high skilled and low skilled workers[2]



1) average growth rates
2) "high skilled workers" are defined according to ISCO-88, group 1, 2, 3. All remaining groups are classified as "low skilled".

Source: Caroli 1997, based on OECD estimations from national data (STI/EAS Division)

What is the theoretical background and what are the consequences in terms of skill requirements?

Human capital theory

Human capital theory (cf., e.g., Becker 1964a, b; Denison 1962; Mincer 1974) is based on the correlation between the level of education and productivity. An increasing demand of firms for education is thus seen as a function of its economic profitability, which in turn is related to higher skill requirements of the economy. The education and training system is in this case shaped by market needs; an excess of skill supply will result in diminishing returns (wages, unemployment) and subsequently lead to a decrease in the individual demand for education.

"Despite considerable criticism…the human capital theory has provided the basic framework for public education policies in recent decades. (It has) justified state intervention and support for the process of mass education as a contribution to increasing the productivity of our…countries." (Mallet 1996, p. 6 f.)

Screening, credentials and social closure

Since the early seventies, human capital theory has come under closer scrutiny, specifically in the context of imperfect information in the labour market. Credentialist and screening theories (cf. for a critical review: Blaug 1985)[38] suggest that initial training is not so much an investment which can increase human capital, but rather that success in training (as proved by certification), can act as a means of disclosing hidden information as to workers' productive potential. Both theories, credentialism and screening, refer to the selective role of education for the distribution of social positions.

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37) *This chapter is in parts based on the contributions of E. Caroli, of G. [illegible] and of [illegible]/P. Ryan (all 1997).*

38) However, Blaug identifies different versions of credentialist theory; a weak version of this is not incompatible with human capital theory.

control systems, based on ICTs, are introduced in order to ensure the efficiency of production.

Furthermore, a total quality management (TQM) is to implement new forms of quality assurance. TQM has not only impacts on the improvement of goods and services but also on work quality. Production workers are directly responsible for the quality of their products (zero-defect programmes) and are much more involved in problem-solving by "continuous improvement programmes". Thus, quality assurance becomes an integral part of productivity.

Adaptability and flexibility of firms

A significant - and increasing - number of companies in the Western World[36] have introduced new forms of production and work organisation. However, industrialised countries have developed different ways to enhance the adaptability and flexibility of firms, concerning the deployment of workers.

Here it is necessary to distinguish between internal and external flexibility on the one hand, and between numerical, functional and wage flexibility on the other (Boyer 1987; Buttler 1988).

> *Internal flexibility* refers to the strategy of firms concerning their own workers.
>
> *External flexibility refers to* hiring and wage variations for workers recruited from outside.
>
> *Numerical flexibility* is the adaptation of the volume of work to firm's needs in response to variations in demand and/or technological trends. On the internal labour market those measures are: overtime, short-time or part-time work, early retirement schemes, etc. On the external labour market it concerns hirings and dismissals (fluctuations).
>
> *Functional flexibility* means the adaptability of workers to a variety of tasks and workplaces to changing demands. Functional flexibility is primarily found in internal labour markets. It may be seen as a firm's strategy to prefer internal adaptation instead of external related strategies, in particular where rigidities exist in the external labour market.
>
> *Wage flexibility* represents - according to the neoclassical theory - the most efficient form of labour-market co-ordination. It brings supply and demand into an equilibrium and thus clears the market. In this case, wage flexibility is essentially the same as external flexibility.

Vickery/Wurzburg (1996), based on detailed material from different OECD countries, distinguish between three approaches to firms' adaptability and flexibility:

- The *"market-driven"* approach with a relative liberal structure of markets. Workforce adaptability is achieved through well-developed external labour markets so that firms can dismiss workers whose qualifications are no longer apposite and hire those with the desired skills. Countries of this type (with some differences) are: North America, Australia, New Zealand, the United Kingdom.

- The *"relation based or consensual"* approach is based on negotiation to reach consensus among a wide range of stakeholders, including employees, suppliers, customers, social partners and the wider community. It allows a more deliberate, often long-term approach to enterprise strategies and resource allocation. This consensus is being extended through work councils encouraged, for example, by the European Union.

  Heavy investment in education and training generated a solid base of skills and high degree of individual competence, making workers generally more adaptable to changing circumstances. This approach has more of the elements of functional flexibility and internal development. Countries of this type are Germany and Austria, and to varying degrees, the Nordic and other countries, e.g. Belgium, France and The Netherlands.

- A third approach, also consensual, but *centred on the firm itself*, is found in Japan. The adaptability of labour has been achieved through an education policy that provides a broad base of general abilities and highly developed practices for making full use of a company's human resources. Vocational skills are provided by firm-based vocational training and intra-mobility between occupations and jobs. This approach also includes elements of functional flexibility and internal development.

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[36] The OECD estimates the current share of bigger companies which introduced new forms of work organisation by around one quarter (Papaconstantinou 1996).

Advocates of the *screening theory* deny any link between wages and the evolution in the supply of skills on the one hand, and the skill requirements of new technologies on the other hand. According to them, firms do hire people with high educational levels and pay them more, but this is not due to any positive influence of skills on workers' productive performances. What happens is that firms do not know workers' productivity at the time they hire them. So, they use their educational level or training achievement as a "signal" of their potential efficiency.

> Thus, according to screening theorists, education has the function of a filter, whereas its impact on productivity is most uncertain. This causes the observed upskilling of the labour force and may signify "over-education" if it does not meet the economic demand for higher skills.

Similar reasoning has led the *credentialists* (e.g. Arrow 1973, Spence 1973, Collins 1979, Blaug 1985) to argue that it is not the productivity of skills which counts, but the signals sent out by certificates. Given imperfect information on real skills, certificates and formal qualifications act as a substitute for knowledge and abilities, and thus initiate a selection process in which people with lower qualifications are sorted out.

If a "job queue" (Thurow 1975) is at work where qualifications - in particular general skills - are not valued for their productivity, but are seen as indirect information on "trainability", "employability", work habits and discipline, there is a built-in incentive for young people to acquire ever more education in order to stay ahead of the queue. The result would be a "credential inflation" (Rawlis/Ulman 1974) where the effects on wages, productivity and economic growth are uncertain. In this case, the labour market value of credentials will decline continuously.

According to the credentialists' thesis, there are no net social benefits to education. Even if individual returns on education (e.g. earnings) are high, the social returns on education might be negative, compared with the costs of education.

Workers who cannot cope with changing requirements or who do not fulfil the formal standards of the recruitment process face the danger of *social exclusion*. This problem is indicated by increasing selection processes going on in the labour market in favour of those who have - or are supposed to have - the "necessary" qualifications and skills (Collins 1979).

Since qualifications acquired at school or in training tend to be less transparent for employers (as an indicator of "employability"), additional selection criteria are introduced. In the first selection stage, however, a successfully completed formal education or training course - considered as a proxy for achievement and performance - serves as an 'entry filter'. In subsequent selection stages, further criteria are used. The paradoxical situation arises in which certificates become more and more necessary, but less and less sufficient for entering a job.

The reason for such recruitment behaviour could be an unwritten "fairness-in-hiring rule" or "demonstrative consumption" by firms and organisations to increase their status by means of the formal qualifications of their employees. Another reason might be that the decision-makers are themselves highly qualified and "pull" higher educated people into skilled jobs.

Since work is still, and increasingly, associated with the social status of the individual, workers who do not pass those filters because of lacking or inappropriate qualifications, or owing to the obsolescence of their qualifications (e.g. caused by long absence from the labour market, and in particular long-term unemployment), are in danger of being socially excluded or marginalised.

The theory of "social closure" is founded upon Neo-Weberian sociology and developed by Parkin (1979), Collins (1979), Murphy (1988) and Witz (1992). "Credentialism is a form of closure designed to control and monitor entry to key positions in the division of labour" (Parkin 1979, p.47 f.). It is recognised in literature that there has been a fundamental shift in the nature of social exclusion, mainly due to property ownership and credentialism (Brown 1995).

The credentialists' view may to some extent be supported by preliminary results of analyses made for six European countries,[39] using a decomposition of demand and supply effects over a longer time period. They show that supply effects - measured as employment change for persons with different levels of formal qualification - tend to be more important than demand effects - measured as changes in the occupational structure - in explaining the rising level of qualification in these countries (Mallet 1996; Mallet et al. 1997). Whether these trends could be interpreted as credentialism or not has to be clarified by further analyses, taking into account additional variables and characteristics.[40]

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[39] France, Germany, Ireland, Italy, Netherlands, Spain, the UK

However, the hypotheses of increasing credentialism and social exclusion are not generally agreed. Brown (1995) even points out that the increasing demand for credentials reflects the changing nature of work. Given imperfect information on skills, firms act rationally to relate workers' potential productivity to their educational achievement in the first selection round. In addition, employers may modify their recruitment criteria due to changes in management and work organisation and to technological innovation. Thus, there may be an increasing demand for professional, managerial and technical workers as well as a more intensive struggle for competitive advantage among the individuals in education and the labour market.

> Robinson/Browne (1994) point out that human capital theory and the signalling/screening as well as credentialist theories do not exclude each other, but refer to different fields of relevance. Thus, for example, educational credentialism is a phenomenon only in specific segments of the labour market, e.g. in the public sector, and refers more to the starting period in working life (Graff 1996).

Additional evidence against pure credentialism has been put forward by researchers analysing the evolution of wages. Indeed, skilled workers' wages have kept increasing despite the rise in the number of highly qualified people. They refer to the fact that wages have increased more slowly in low skilled jobs than in high skilled ones which has been the case in quite a large number of OECD countries, yielding an important increase in wage inequality (Mincer 1993, Abramovitz/David 1994). This is interpreted, in the tradition of human capital theories, as signalling the productivity of skilled labour: if the price of skills keeps increasing while its supply rises as well, this must be due to an at least equal increase in demand.

Other studies have proposed elements for a better understanding of the logic of certificate distribution in the job market, in particular those which can be classified as "mismatch" theories between education and employment (cf. e.g. Franz 1996). These theories try to combine both the human capital and the credentialist view and focus on the dynamics of the education and training system on the one hand, and the system of production on the other (Carnoy/Levine 1985).

Skill requirements[41]

The transition from Taylorism to a new "skill-labour nexus" and the implications of the "skill producing system" and the "wage-labour nexus" are illustrated by Boyer/Caroli 1993 *(figure 2-11)*.

The *"national skill producing system"* is characterised by the combination of four elements (Caroli 1997a, b):

- the efficiency of the education and training system;
- firms' involvement in skill enhancement;
- the willingness to pay for education and training;
- the degree of institutionalisation and codification of education and training and of the transferability of skills.

In a similar way, the *"wage-labour nexus"* can be defined with reference to following elements (Caroli 1997a, b):

- the organisation of work inside firms;
- the forms of work mobility;
- the nature of employers/trade union relationships;
- the determinants of direct and indirect wages.

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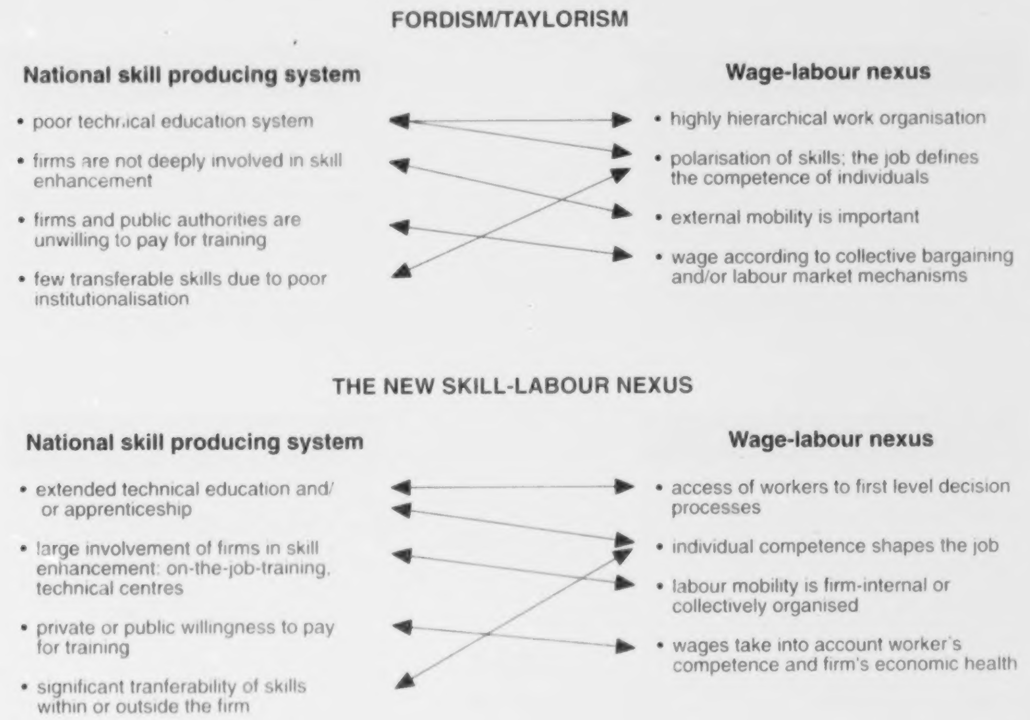
40) The project "Diploma and Labour Market" is financed by CEDEFOP. The results referred to here reflect analyses of the first project phase. The second phase is under way, and results are to be expected by mid 1998.

41) *The following sections are to a large extent based on the contribution of E. Caroli (1997b): Technical change, work organisation and skills: Theoretical background and implications for education and training policies.*

Figure 2-11: Transition from Taylorism to a new Skill-Labour Nexus



FORDISM/TAYLORISM

National skill producing system

- poor technical education system
- firms are not deeply involved in skill enhancement
- firms and public authorities are unwilling to pay for training
- few transferable skills due to poor institutionalisation

Wage-labour nexus

- highly hierarchical work organisation
- polarisation of skills; the job defines the competence of individuals
- external mobility is important
- wage according to collective bargaining and/or labour market mechanisms

THE NEW SKILL-LABOUR NEXUS

National skill producing system

- extended technical education and/ or apprenticeship
- large involvement of firms in skill enhancement: on-the-job-training, technical centres
- private or public willingness to pay for training
- significant tranferability of skills within or outside the firm

Wage-labour nexus

- access of workers to first level decision processes
- individual competence shapes the job
- labour mobility is firm-internal or collectively organised
- wages take into account worker's competence and firm's economic health

Source: Boyer/Caroli 1993

A co-operative wage-labour nexus tends to increase training opportunities inside firms since the organisation of work will be less hierarchical and thus more qualifying. When internal mobility criteria and wage formation do recognise technical skills, workers are strongly induced to invest in training.

The precise form of these elements may vary and determine the more or less co-operative nature of the wage-labour nexus. In turn, both institutions articulate into a "skill-labour nexus" which determines the level of skills in the economy.

Technologies and skills

One of the main questions related to skill requirements and their changing nature is whether the two evolutions - namely the spreading of new technologies and the upward evolution in the job structure - are connected with each other and how.

A broad range of empirical literature has been developed on this issue, displaying a strong link between the development and use of new technologies on the one hand, and the rising skill level of the labour force on the other. Basically these studies use two types of data: on firm and on industry level (Caroli 1997a).

Using firm-level data:

- Siegel (1995, cit. by Caroli 1997a) reveals a positive correlation between labour quality indices and computer expenditure;
- Nyholm (1995, cit. by Caroli 1997a) as well as Doms et al. (1995, cit. by Caroli 1997a) show that the more technologically sophisticated establishments employ more highly educated people.

At the industry level:

- Wolff (1996) shows that computerisation has a positive impact on the share of highly educated information workers in the US;
- Bernt/Morrison/Rosenblum (1992) and Berman/Bound/Griliches (1994) also reveal a positive

correlation between high technology capital intensity and the share of highly skilled white-collar workers in employment;

- similar results are obtained by Colecchia/Papaconstantinou (1996) for a large set of developed OECD countries.

On the whole, these and other empirical studies display a strong complementarity between the use of new technologies, and in particular of ICTs, and the skill level of the labour force. The precise direction of causality between technical development and skills, however, has not yet been determined sufficiently by research.

However, the question of causality is not really relevant. The only important point is that skills and new technologies enhance each other, and that both should be developed in order to foster economic growth.

Intermediate skills

Re-considering the training aspects, however, the question remains open whether these positive impacts of new technologies also apply to intermediate skills, in particular those provided by VET. The studies referred to above concentrate on the highly qualified. If we remember some statements in the publication of Dumort/Dryden (1997), it is not excluded that these highly qualified groups will profit much more from ICTs than VET trained people (not to mention the unskilled).

The impacts of new technologies on employment, job requirements and skills is a complex set of relationships. There seems to be "a direct relationship between 'upskilling' and technical change: industries which invested more in research and were more innovative tend to acquire more human capital… [Therefore,] policies to promote technology diffusion should be co-ordinated with those that promote the development of adequate human capital." (Papaconstantinou 1997, p. 8f.)

The improvements in the means of communication made possible by the development of ICTs tend to facilitate the internationalisation of production. A large part of activities requiring unskilled labour can be relocated from industrialised to developing countries. As a consequence, firms' skill requirements tend to rise.[42]

Transferable and flexible skills

A second reason for the positive complementarity between skills and ICTs is that the role of information processing and of the flexibility of workers is becoming crucial in the production process. This feature of new technologies has already been pointed out by Ryan (1987).

Since then, a lot of studies have been carried out which definitely confirm this trend. Capital equipment tends to become more fragile, so that workers must be able to cope rapidly with a wide range of unforeseen difficulties arising in the production process. Moreover, workers must be able to handle the increasing amount of information processed in the production activity as well as to take initiatives in order to adapt the production process to an increasingly unstable demand. This requires from them a high degree of versatility.

Similarly, Colardyn/Durand-Drouhin (1995) point out that most jobs require a multiplicity of skills, ranging from physical abilities to cognitive skills (e.g. analytical and synthetic reasoning, numerical and verbal abilities) and interpersonal skills (leadership, supervision, team work).

"Many studies have concluded that…computer-based new technologies tend to require lower standards of traditional skills and higher abstract and synthetic reasoning abilities. They thus seem to both increase the skill content and the share of high-skill jobs in economies, leading to an upgrading of skill requirements for the workforce as a whole." (Papaconstantinou 1995, p. 9)

The direct consequence of this is that workers - either white or blue-collar - need highly transferable skills together with a good educational level. Given the rapid pace of technical and economic change, they may be forced into changing activities and jobs several times in the course of their working life. A solid educational and training background will help them adapt to new requirements.

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42) At least in relative terms, whether absolute employment will rise as well is a controversial question, however.

Flexibility and productivity of skills: a trade-off?

This points to the question whether there is a "trade-off between flexibility and productivity": on the one hand, workers with specific skills may have better employment opportunities in the short-run, in particular during their transition from training into the labour market. On the other hand, in the longer term the required flexible skills increase the chance of stable employment. Thus, there is basically not a real trade-off between flexibility and productivity in a dynamic perspective. The only trade-off (if there is one) is between a static and a dynamic view of economic development (Caroli 1997a).

> Although there are no comprehensive and representative results for all industrialised countries or sectors on this question, a number of sectoral studies confirm that new technologies (in particular ICTs) require more and more flexible and broad skills rather than specific ones.

Thus, for example, recruitment requirements in the UK banking sector, with intensive use of ICTs, place emphasis on behavioural (personality) skills and the ability to be adaptable and flexible in response to change, job practices, rather than on specific banking skills (Courtney 1997). Similar developments are found in the high-tech sectors of the German automobile industry, although they focus on highly qualified workers (Dybowski 1997).

The changing nature of work and skills

In view of the impacts of technology and innovation on human resources, priority is accorded to multiple skills, comprising education, training and experience, as well as the ability to communicate and work in relatively unstructured situations. The same process of increased functional and extra-functional responsibilities, however, may lead to a depreciation of the traditional skilled worker at the intermediate level, since it requires both practical experience with machines and material and theoretical knowledge of the principles of the production process ("production intelligence"). They can be defined as holistic qualifications and skills, the overcoming of traditional occupational demarcations - unless these occupations are not adopted appropriately - and the combination of specialised abilities with methodological and social skills.

The new conditions of production, group-working and reorganisation of work may increase the autonomy and expertise of workers. But they may also cause problems if the systems of remuneration and gratification do not take into account different performances and qualifications within the group. The integrative effects of team-working may become inefficient and the motivations and incentives of the main performers of a group may sink (Strötgen 1993).

In addition, computer-based technologies bring about a change in work and require multiple skills and competencies of workers. These are characterised by a higher degree of flexibility, enhanced qualifications to manage the instalment and starting up of machinery, to operate flexible control systems as well as for their regulation, monitoring, attendance and maintenance. Traditional work areas such as mechanics, hydraulics, pneumatics, electrical equipment have to be complemented by new fields of competence, such as electronics, control techniques and technical organisation.

Thus, an emerging condition for work in computer-based manufacturing is enlargement of specialised skills by competence in additional disciplines, e.g. mechanical and electrical engineering, electronics, data processing and industrial engineering.

> In view of the fast-moving specialised knowledge, "extra-functional" or key abilities and skills are increasingly important for the modernisation process. They include personal abilities (e.g. inclination to learn, overarching and coherent reasoning, communication skills and capacity for confrontation). Together with specific skills, these competencies constitute a higher degree of powers of initiative as an essential precondition for group-oriented work and process regulation.

This question is particularly crucial for workers with "lower intermediate skills". According to the definition proposed by the British National Institute for Economic and Social Research (NIESR), lower intermediate skills are acquired at work as well as in secondary level VET, that is:

- in the dual system or in full-time technical higher schools in Germany;

- in the apprenticeship system or in the various youth training schemes (YTS) in the United Kingdom;
- and in CAP and BEP training routes in France (Caroli 1997a).

They usually amount to limited competencies: workers with lower intermediate skills have learnt how to perform a defined series of tasks, but are not always prepared to take full responsibilities or to adapt to different job situations.[43] Therefore, the average level of intermediate skills definitely needs to be increased so that most, if not all, workers be endowed both with broadly transferable skills and with a good capacity to adapt and to learn.

Significant changes are not limited to the requirements for skilled workers, but also affect the specific and executive tasks of technicians and master craftsmen or foremen. The following trends are emerging (Dybowski 1997 referring mainly to German research):

- for master craftsmen and foremen, the range of specific work tasks is contracting, but expanding for technicians;
- technicians in modern manufacturing concepts are increasingly entrusted with project management, executing orders and with cooperation in problem- solving teams in order to optimise the production process;
- master craftsmen and foremen delegate specific tasks (e.g. quality assurance, disposition of materials, manufacture regulation) to the work team. It is becoming increasingly important to initiate continuous improvements and to maintain and monitor their implementation;
- equally, executive tasks are gaining in importance for both technicians and master craftsmen; an exception is the planning of personal assignments which is increasingly being delegated to the team itself;
- career development and promotion of workers are becoming an essential element in worker motivation; this implies the assessment of development needs, advising, coaching and promotion.

Training for experience-led working

Technology and innovation have substantial impacts on work and skills. Since an increase in the innovative capability and flexibility of firms can only be brought about through a changing deployment policy, work takes on a new strategic function in securing the continuity of the production process and ensuring efficient use of complex production plant (Schumann et al. 1994).

High-tech manufacturing tends to replace human work - including various regulation and control functions - by technical systems. However, there are limits to the automation of manufacturing processes beyond which human work cannot be replaced. On the contrary: the human element becomes increasingly important for the smooth running of technical plants. A competent intervention of workers and experience-led action is meant to avoid malfunctions and accidents and to include preventive maintenance.

The reason for the growing importance of human work is that concrete production processes cannot be predetermined totally in practice. High-tech processes become more fragile and in daily practice are subject to imponderables resulting from the quality of materials and processes, the condition of technical equipment and external influences (e.g. the weather, power cuts, goods delivery, etc.).

The required qualifications to prevent and manage those imponderables is experience-led working (cf. also Drake 1995). They include skills such as associative reasoning, complex sensory perception and a "feeling" for technical equipment. In addition, an efficient reaction to technical or computer malfunctions requires a good capacity to synthesize as well as the ability to communicate with peers in order to assess the origin of the breakdown. These are competencies, which are normally acquired only through long work experience.

> New forms of training, including "experience making" thus gain in importance in vocational training and further training, but also require new learning arrangements (Dybowski 1997). Approaches to experience learning aim at the simulation of practical production and administration procedures, e.g. by implementing "learning isles" and "learning stations" within production.

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43) These results contradict to some extent those of the British Government's "Skills Audit" (Green/Steedman 1997) referred to above.

The self-learning capacity and experience-making are systematically promoted by appropriate teaching methods and aids. Basic experience conditions such as perception, conscious use of standards, sensitivity, attention to situations which require evaluation, etc. should be trained. These teaching concepts also include methods of purposively acquiring and evaluating experience.

2.3 Conclusions

The structural change in economies, characterised by the growing importance of services, information, technologies and innovations will substantially affect the skill requirements of workers: Transferability, flexibility and versatility or polyvalence of skills are the most common terms used in this context.

This generally accepted development does, however, throw up some challenges which policy makers, researchers and practitioners will have to take up:

- Will these restructuring processes lead to a polarisation which will benefit a relatively small group of highly qualified, flexible and motivated workers on the one hand and, on the other, expose a group of workers to less qualified, less well paid and insecure jobs?
- This dilemma between forced productivity, technology applications and work intensity on the one hand and growing selection and alienation of a by no means negligible group of people on the other seems to be irresolvable. A renunciation of socio-economic progress would lead to stagnation, a drop in competitiveness and a further rise in social problems. There is general agreement amongst all the players that what is required is above all appropriate and targeted labour market and social policy measures.
- The role of education and training, although very important, would be rather passive and reactive if it were limited to a mere adjustment to the given situation. Hence, it should be strategic and anticipatory by seizing all the opportunities for giving younger and older people those qualifications which will facilitate their entering an occupation and their later career advancement. Educational science along with ergonomics, economics, sociology and psychology are called on to develop suitable curricula.
- Flexible qualification elements, which are the key to employment, are just as important as training in future-oriented and growing sectors/occupations. They must be complementary but also impart skills which are of interest for the company. This also includes training in experience-making and a greater emphasis on informal qualifications for which there are already several approaches (cf. Part Four).
- The questions which are raised here have to do with appropriate learning venues, learning goals and, last but not least, a financial redistribution of training costs.

3 Costs and benefits of vocational training[44]

The economics of education identify the value of education and training as tools in aiding economic and enterprise growth and yielding individual returns. The theory of human capital gives labour a status alongside that of physical capital as an input of a productive system.

According to the human capital theory, individuals, firms and the State decide to "invest" in education and training as long as the returns on, or more generally, the benefits to this investment are higher than the costs. Expenditure on education and training yields a stream of benefits in the future. If the present value of the benefits is greater than the present value of costs, and if these returns exceed expected returns in alternative investments (e.g. in physical capital), the educational investment will be made. This will result in an increase in the prosperity of the individual and, under certain conditions, of enterprises and society as a whole.

Since the returns accrue later than the costs, educational investments can be defined as a "production detour". Therefore, education and training investments always require decisions made under uncertainty, where failures and mis-investments cannot be excluded.[45]

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44) *This chapter is to a large extent based on following contributions: U. van Lith: Costs and benefits of vocational training. Contribution to economic growth, individual and social returns; W. Kau: Costs and benefits of vocational training on the micro-economic level (both 1997).*

45) These problems apply to physical investments either, however.

Those mis-investments are the smaller,

- the more the investor is informed on the usability and the prospects of education and training, and
- the less institutional regulations allow to pass costs to others but allow for an appropriation of monetary returns.

In general, schools and universities show a significant lack of information on costs, benefits and performance. Moreover, public financed initial and further training are often due to inefficiencies and thus misinvestments (Heckman 1997). Although market-oriented systems are expected to reveal a closer relation between costs and returns they are also susceptible to failures (misdirection), as Stevens (1996) shows for the UK.

3.1 Cost-benefit analyses and their limitations

Assignment of costs and benefits

Investment in VET aims at yielding a net return (monetary and non-monetary benefits) and at promoting economic growth, productivity, employment and the invention, use and diffusion of innovations. The objective determination of costs and benefits, however, causes difficulties. One major problem is that the information necessary to determine those costs and benefits has an ex-post character.

In addition, analyses of the impact of education and training on wages and salaries, on growth and employment gains, and on productivity and innovation face the difficulty of their exact attribution to skills. V. Lith (1997) notes that, although econometric methods are making progress in controlling for other factors of influence, such as talent, experience, social origin and other individual characteristics, due to insufficient statistical data, changing work organisation and technologies, these attributions are not always accurate.

He concludes that up to now the supposition seems justified that the considerable expenditure in Europe on schools and universities had almost no impact on economic growth. In his view, enterprise training and labour-market training have clear advantages.

This statement should be qualified, however, at least as regards the dual system of apprenticeship training and, in contrast, higher education in Germany. Reinberg (1997) demonstrates in his statistical analysis that in past years considerable employment gains were realised only for "Fachhochschul-" and university-trained workers. This favourable position also applies to unemployment being far below average, to a relatively high level of appropriate employment and to significant positive wage differentials.

On the other hand, workers who have completed apprenticeship training and further vocational training were affected by major employment losses and are increasingly hit by unemployment.[46] These findings are the more surprising since the number of higher education graduates increased considerably in the past decade (1985-1995: + 40%), whereas the number of apprenticeship training leavers declined by around one third.

Conceptions and measurement

The relevant economic conception of "costs" is that of subjective costs, i.e. costs to be expected if one out of two or more alternatives is preferred. For the individual, the alternatives could be to study or to earn money immediately after compulsory school; for the firm: to train in-house instead of recruiting workers from the external labour market.

The measurement of subjective costs by weighing alternatives is difficult since individuals and firms have to reveal their preferences. Prices and earnings of alternative markets (e.g. opportunity costs or income foregone that an individual would otherwise earn during the period of additional training) would be correct indicators of avoided alternatives. Because of market imperfections and of positive or negative external effects, there are, however, not always markets available to reveal those preferences. In addition, some immaterial costs (e.g. social integration, prestige, etc.) are difficult to measure since they have to be weighed subjectively.

Similarly, a measurement of the *benefits of training*, including alternatives, would be problematic. This would require not only information on future earnings ("earnings capacity") of different alternatives, but also consideration of subjective and immaterial benefits and/or of non-monetary incomes.

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[46] However, employment situation for the unskilled has worsened much more.

For the individual, the benefits of training could also take the form of avoidance costs (e.g. lower risk of unemployment or social exclusion), or diverse social benefits, which can in fact rarely be quantified. However, several studies confirm a correlation (not yet causality) between higher educational levels on the one hand, and, for example, better health and parenting, lower criminality, and more intensive political, social and cultural participation on the other (cf. the overview in Coopers&Lybrand 1996a). Since society, too, profits from these benefits, e.g. by better social cohesion, most of individual benefits are at the same time social benefits.[47]

V. Lith (1997) criticises the assumption of a close relation between qualification and social benefits. Although there is a correlation between both, the causes of, for example, a higher criminality of lower skilled people, are normally not a lack of formal education and training but poor social and economic conditions or deficient families. However, since these deficiencies themselves correlate with education and training, a lower criminality, better parenting and health, etc. of higher educated people are indirect effects of education and training.[48]

Subjective benefits for the enterprise could be the greater prestige of a training firm, avoidance of fluctuations and "miscasting", lower costs of instruction or lower recruitment costs. And subjective benefits for the State or society as a whole could be the social benefits mentioned above, enhanced attractiveness for foreign investors because of a more highly skilled workforce and social/political stability and cohesion.

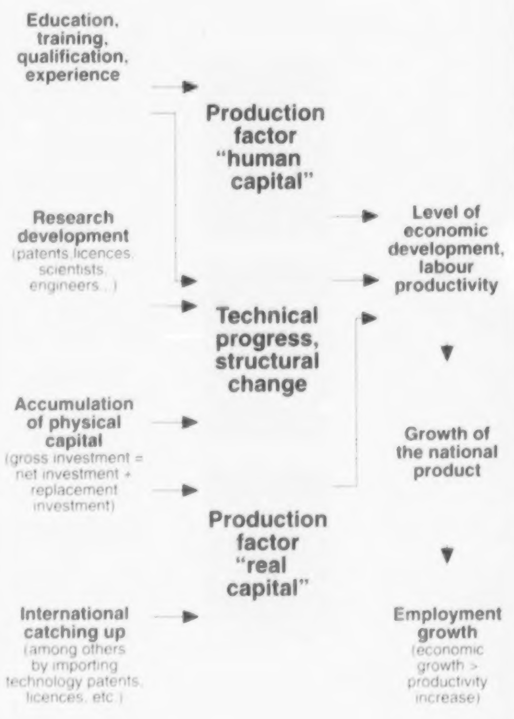
3.2 Macro-economic costs and benefits of VET

Growth of the gross domestic product (GDP) is a result of a combination of production factors and is in the last resort dependent on the final demand of the population (domestic or foreign) for goods and services. Factors which influence the production factors "real capital" and "labour or human capital" are, in the traditional view, investments.

While the economics of education have long emphasised that education and training are strongly correlated with increased earnings and economic growth, traditional growth theories treated human capital, qualifications and technical progress as exogenous factors of influence ("falling from the sky").

> A new insight was provided by the "new theory of endogenous growth", which explicitly takes account of technical progress and its determinants, in particular research and development, innovation and the level of education and training of the workforce, i.e. the "quality of the human capital" (*figure 2-12*).

Figure 2-12: Factors of influence to economic growth and employment: The "new theory of endogenous growth"


Education, training, qualification, experience
Production factor "human capital"
Research development
(patents, licences, scientists, engineers...)
Level of economic development, labour productivity
Technical progress, structural change
Accumulation of physical capital
(gross investment = net investment + replacement investment)
Growth of the national product
Production factor "real capital"
International catching up
(among others by importing technology patents, licences, etc.)
Employment growth
(economic growth > productivity increase)

Source: based on Graff 1995

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47) The puristic economic view, that higher criminality, for example, secures the work and incomes of policemen, lawyers, judges, staff in prison etc. and thus rises the domestic product in quantitative terms should not be regarded as real and desirable social benefits.

48) Normally, statistical analyses using, for example, multivariate methods, should be able to distinguish between those direct and indirect effects of education and training. To what extent this can be achieved, depends not at least on the quality of data – but it is not a principal question.

Table 2-7: The contribution of education to economic growth: Selected research results

author(s)	**countries**	**period**	**measure of education**	**conclusions: does education explain growth?**
Alesina et al. 1992	98 countries	1950-1982	enrolment rates in primary and secondary schools	positive impact only of enrolment rates into primary schools, for secondary schools no significant contribution to growth
Amable 1993	59 countries	1960-1985	enrolment rates	positive impact both of primary and secondary enrolment
Barro 1991	98 and 88 countries	1960-1985 1970-1985	enrolment rates in primary and secondary education; student-teacher ratios, literacy	human capital is correlated with physical investment to GDP; impact of literacy is not significant
Baumol, Blackman, Wolff 1991	111 countries	1960-1985	enrolment rates in primary and secondary schools	positive impact mainly of secondary school enrolment
Bradford de Long, Summers 1991	25 and 61 countries	1960-1985	enrolment rates	no or only small impact; the key factor is physical equipment
Blomström, Lipsey, Zeijan 1992	107 countries	1970-1985	enrolment rates in secondary schools	impact of secondary school enrolment is significantly positive
Cohen 1992	89 / 24 countries	1960-1985	enrolment rates	positive impact, but education is partially endogenous, low education trap is possible
Denison 1985	USA	1929-1982	length of schooling	positive impact: 26% of productivity growth is due to more education
Engen, Skinner 1992	107 countries	1970-1985	literacy, enrolment rates in secondary schools	literacy and secondary school enrolment have positive effects on growth
Graff 1995	75 countries	1965-1985	educational level of labour force; literacy; enrolment rates	except literacy, enrolment rates and educational level of the labour force significantly explain economic development (together with accumulation of physical capital and technical progress)
Jorgenson, Fraumeni 1992	USA	1948-1986		investment in human and non-human capital accounts for a high proportion of the growth of US economy; educational investment will continue to predominate in the investment requirements for more rapid growth
Levine, Renelt 1992	104 countries	1960-1989	enrolment rates in secondary schools	positive and robust correlation between average GDP-growth and secondary school enrolment rates: up to 17% of economic growth in developing countries and up to 9% in advanced economies is accountable to education
Lichtenberg 1992	53 countries	1960-1985	enrolment rates in secondary schools	significant positive coefficients of elasticity between enrolments and economic growth
Mankiew, Romer, Weill 1992	89 countries / 24 countries	1960-1985	enrolment in primary & secondary schools	positive impact: elasticity around 0.3 for secondary school enrolment
Meulemeester, Rochat 1995	6 countries	end last/ beginning of this century - 1980s	number of students in higher education per capita	significant causality from national higher education efforts to economic development (GDP per capita) in F, JAP, UK; no causal relation measured for I, AUS
Otani, Villanueva 1990	55 countries	1970-1985	educational expenditure in % of public expenditure	positive correlation between educational expenditure and economic growth
Wolff, Gittleman 1993	111 countries	1960-1988	enrolment rates in primary and secondary schools	positive impact only of primary school enrolment; complementarities between investment and skills

In parallel, economists of innovation long ago demonstrated that technological change strongly improves a firm's performance, both in terms of productivity and competitiveness. Similar results have been demonstrated at the macro level by endogenous growth theorists.[49] Lucas (1988), Romer (1990) and Becker/Murphy/Tamura (1990) have shown that human capital and technology are the major engines of the growth process in the long run. Comprehensive analyses based on the New Growth Theory are given, for example, by Arnold (1995), Boyer/Caroli (1993) and Graff (1995, 1996).

Traditional "growth accounting" uses aggregate production functions which relate growth - as an output variable - to physical capital and labour. More recent studies apply econometric techniques to test the link between human resource development (and other variables) and growth in GDP.

A number of empirical studies have shown the significant relationship between skills and economic growth *(table 2-7)*. However, most of them - maybe in consideration of the Anglo-American systems of education and training - focus on general education rather than vocational or practical training. Measures are mostly enrolment rates, length of schooling or literacy. Comparatively little research work has been carried out so far on, in particular, performance in vocational training.

There are, however, also reservations about the assumed causal links between education/training on the one hand and economic growth on the other. V. Lith (1997) argues that investment in vocational training rarely induces investment in physical capital. Real investment depends on entrepreneurial initiative and, if at all, on the personal characteristics and work experience of workers.

A counter-argument would be that, as growth theory indicates, economic growth is a result of the complementarity of all production factors and requires investments in real as well as in human capital. Measures of the contribution of human capital to growth assume, in any case, a close *correlation*; only few studies have assumed a *causality* between both (e.g. Meulemeester/Rochat 1995). This would mean that bottlenecks would result *without* investment in human capital and its quality - qualifications as well as work experience. Economic growth should then be lower than is the case with appropriate investment in education and training.

This does not yet, of course, give an indication of which kinds and contents of education and training are suited to stimulating growth. Given the complementarity between investments in human and physical capital, the question arises of which skills are expected to be the most appropriate. These may be skills which support firms' activities to open new existing markets, to develop new products and to introduce new production processes.

> Innovation, efficiency and quality of production as well as the steering of the whole business process require qualifications which surely are not only attainable by work experience alone. The question still remains open: what are the qualifications, skills, personal abilities, etc. which ensure and enhance productivity and growth?

The character of VET systems, i.e. the institutional setting and regulations for education and training, play a crucial role in the debate on economic growth and its relation to VET. This is due to following aspects (v. Lith 1997):

- available knowledge in science and technology are only usable and applicable if workers are able to understand, process, develop and apply existing know-how;
- the life-span of products and services as well as of production procedures is shortened considerably, and will continue to do so;
- research and development, innovations, quality assessment, and individualised client-oriented performance of goods and services will gain in importance under the conditions of competitive and global markets;
- skills and human resources become technically and economically obsolete faster than in the past.

> Therefore it increasingly depends on the capability of the systems of education, training and science, on the one hand, to produce, impart and practically transform new knowledge;

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[49] Cf., among others: Romer (1990, 1994); Wolff/Gittleman (1993); Dowrick/Gemmell (1991); Galor/Tsiddon (1994); Helpman (1992); Levine/Zervos (1993); Psacharopoulos (1995); Graff 1995.

and on the other to identify new skill requirements and to transform them into education, training and continuing training curricula. A further task of the education and training systems would be to provide capable pupils, apprentices and students, to provide qualified teachers and trainers as well as suitable equipment. The promotion and support of disadvantaged persons and less qualifiable ones is another great challenge of the education system and other actors in this field.

3.3 Micro-economic costs and benefits

Individual vs. social returns on education and training

At the individual level, and despite the criticisms of credentialists and screening theorists, human capital theory has convincingly stated that education and training pays and should be increased as long as its returns are higher than alternative investments - be it a renunciation of further education in order to earn money or be it saving or investing the money not spent on training into real capital or properties.

The individual pecuniary benefits of education and training can be measured by rates of return. They represent the present value of those costs and earnings (after tax) which are expected during the whole of working life and which are directly attributable to an additional training investment. They include opportunity costs, i.e. earnings foregone in case of a delayed entry into employment.

Empirical evidence has shown in most cases - although not in all countries and for all types of qualifications - that higher education and training yields considerable private returns.

Social rates of return, in contrast, reflect the total economic contribution of educational investment to economic growth and welfare. Empirical evidence confirms, however, that private rates of return tend to be higher than social ones because the correction of individual earnings by taxation in the later working life does not equal the expenditure incurred by society (tax payers) at the time of training.

Thus, the implication, currently heavily discussed in research and policy, is that more highly educated people pay back much less than the cost of their education financed by society. Grueske (1994) shows for university graduates in (West) Germany that in a longitudinal view and according to all variants calculated, university trained people - with variations according to the field of study - will pay back (in taxes) only a small amount of the expenditure on university training paid for them by society. This question has a considerable importance for equity considerations since university training is to a large extent financed by non-academics with lower lifetime earnings.

The calculation of lifetime earnings, however, would - at the time of an educational decision - require long-term data for individuals. Because that data in general does not exist, fictitious "lifetime" earnings are constructed by using age-earnings profiles of a given year which are transformed to period-earnings profiles.[50]

Another approach to measure the returns on education is the calculation of the earnings differentials of higher compared with lower educated people. In most cases, different educational levels are measured by school years, and the results indicate the increase in earnings to be expected per school year. One point of criticism, however, is that the assumed equality of school years and "productivity/quality" of education and training is not convincing in all cases.

In addition, an interpretation of those earnings differentials will be problematic since it is not known prima facie which other characteristics of the individual are also responsible for increased earnings.

To analyse those intervening variables (e.g. age, sex, occupation, sector, social background, etc.) and to isolate the effect of education on earnings is the subject of numerous pieces of research work done over the past decades. Mostly, earnings functions and econometric methods are used, based on the earnings function of Mincer (1974) and further developments. A representative collection of recent work in this field in Europe was presented during the conference of the Applied Econometric Association (AEA 1997).[51]

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50) Interpreting "age" as "period" assumes that the *current* earnings of older people represent the *future* earnings of the young people of today when they grow older; some corrections can be made if information on variations in age-earnings profiles in past years are available.

51) For an overview on current research and findings cf. Hartog 1997.

Mincer's earnings function:

$$\ln w = \beta_0 + \beta_1 s + \beta_2 t + \beta_3 t^2 + u$$

(with: w = earnings rate; s = level of schooling (mostly expressed by school years); t = work experience; u = unobserved variables; ß = parameter)

The explanatory value of individual cost-benefit analyses

One line of criticism stresses that only few explanations can be put forward in order to account for wage inequalities and that the evolving nature of technical change is only one of them. In particular, some scholars underline that most developed countries have been facing deep institutional changes over the past decades and that these would have contributed to the widening of the skilled/unskilled wage-gap (Howell 1996, Capelli 1995).

According to these authors, there is evidence that many employers have been adopting low-wage human resource strategies, including relocation of activity to low-wage sites, hiring of part-time, low-paid, temporary workers. This has helped to undermine the traditional wage-setting institutions that had been protecting low-skilled workers, thus setting the ground for a decrease in their relative remuneration.

Selected research results for EU countries[52]

In view of the different systems of education and training in Europe, calculations of individual costs and benefits should always consider the institutional and organisational background of the links between education and training, the labour market and the - pecuniary and non-pecuniary - costs and benefits. Therefore in the following section some selected research results will be presented for different EU countries. It should be noted that they also differ in terms of the statistical data and the analytical methods used. An overview of international comparative analyses on the contribution of education to growth and earnings was given in *table 2-7* above.

Germany

- Based on the microcensus (labour force survey) 1991, Pfeiffer (1996) examined the factors influencing individual earnings for three levels of qualification (unskilled, completed apprenticeship training, university). He used multinomial logits and extended human capital equations of the Mincer-type. Factors which have an influence are:

  – school and vocational education and training;
  – technological and economic change;
  – the influence of trade unions on wages and salaries;
  – investment in formal continuing training;
  – work experience as an indicator for non-formal CVT.

  The results show that work experience has by far the greatest influence on earnings. Completion of basic formal education increases the earnings of people without vocational qualification considerably. Similarly, earnings effects are positive for leavers of an intermediary or higher general education route if they complete apprenticeship training afterwards. For "Fachhochschul" and university graduates earnings growth is on the whole positive, but varies according to the subject studied.

- A study by Bellmann et al. (1994) calculates various earnings models for employees (excluding officials). OLS estimates[53] based on a schooling model[54] show that one additional year of education or training yields an increase in earnings of 5.7% to 6.1%; one additional year of work experience increases earnings by around 1.8% to 2.1%.[55] However, these figures have a relatively low coefficient of determination.

  The results indicate that the dual system of apprenticeship training is still a profitable investment. However, earnings increases are increasingly falling behind those of higher education graduates.

  These findings are also confirmed by a univariate analysis of labour force survey data (*figure 2-13*): if the development of the shares of different qualification groups within total employment is compared with their respective

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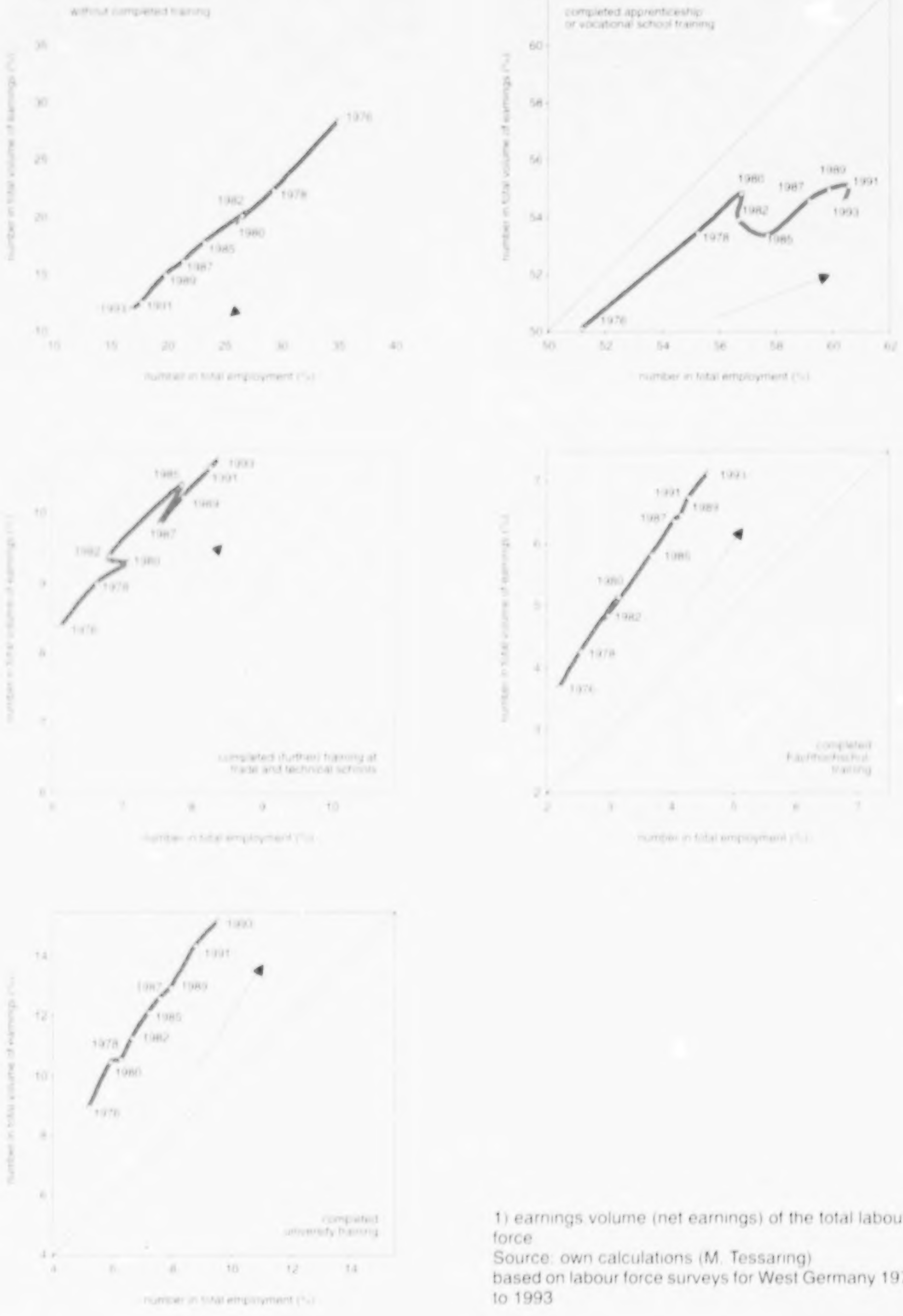
[52] *This section is based on the contribution of W. Kau (1997).*

[53] OLS: ordinary least squares.

[54] Different levels of education and training are assigned different durations (school years).

[55] Another model using dummy variables for levels of qualification yields similar results although the effects of schooling on earnings are in tendency higher.

Figure 2-13: Relation between qualification and earnings structures of the labour force; West-Germany 1976 - 1993 (%)



1) earnings volume (net earnings) of the total labour force
Source: own calculations (M. Tessaring)
based on labour force surveys for West Germany 1976 to 1993

Table 2-8: Private returns to education, by gender and sector of employment; Spain 1990-91 (%)

level of education	Women		Men	
	Public sector	Private sector	Public sector	Private sector
Primary education (versus less than primary)	11.4	12.5	9.0	7.8
Secondary education (versus primary education)	9.8	24.1	5.0	14.5
Vocational education - lower level (versus primary)	2.9	35.0	5.4	21.4
Vocational education - upper level (versus lower level)	10.6	15.3	7.4	10.1
Escuala universitaria (versus secondary)	19.5	34.8	7.8	26.8
Facultad or ETS (versus escuela universitaria)	19.8	12.4	12.6	32.6

Note: Based on earnings functions using dummy variables for each level of education
Source: Lassibille 1997, table 5

shares within the total earnings volume, it becomes obvious that this relation - for workers with completed apprenticeship training - increasingly deviates from an equal distribution (45° line).

Spain

The Spanish education and training system can be characterised by complex training routes and a polarisation of occupational careers which is based on a selective function of the educational system (Planas 1996[56]). Differences in wages and lifetime earnings are result of labour-market segmentation with good jobs and higher earnings, favourable work conditions and low employment risks on the one hand, and unfavourable job prospects on the other.

Affiliation to one of these segments is not accidental, but depends on the human capital and productivity-related characteristics of individuals, as analyses made by Roig/Moreno (1997) confirm. Similarly, sectoral earnings functions for the public and private sectors of the Spanish labour market reveal that although public wages are above private wages, the rates of return to education and experience are lower in the public sector (Lassibille 1997).

Women realise higher rates of return than men, although they earn in absolute figures less than men (*table 2-8*). However, the coefficients of determination are rather small. Thus it is not surprising that analyses based on different data yield different results: San Martin Lizarralde (1997) estimates that below secondary level there is no significant correlation between education and earnings; above this level, the rate of return for one additional year of schooling are put at 6.7%.

Greece

Patrinos (1995) examined the relationship between earnings and family background in Greece. The purpose was to determine whether or not the returns on education differ significantly according to the individual's socio-economic background. The results show that higher rates of return for people "from more privileged backgrounds is evidence of a more successful and profitable job search, facilitated by one's family background and connections... The more privileged, in addition, are more able to afford a lengthy job-search period since they are being supported by their families." (p. 89)

Contrary to findings for the UK and the USA, "a positive relationship between a father's education and returns on schooling is found in Greece. The results are similar to those found in studies of other less developed countries." (p. 85)

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56) This is a result of a long-term retrospective study on the training and occupational pathways of young adults in the area of Barcelona.

Netherlands

In a report carried out by OSA (1994), returns on education are calculated for 35 routes of education and training. Rates of return resulting from one additional route which are below 2% are regarded as not attractive. For example, the route "junior general secondary education (MAVO)" to "intermediate vocational training (MBO)" yields only a return of +1% for women; for men it is even negative. More attractive are routes from MAVO to "senior general education (HAVO)" with additional returns of 4% for males and 7% for females. People who continue from "lower vocational training (LBO)" to MBO can expect additional returns of 3% (males) and 6% (females).

Other countries

Out of the numerous papers presented at the LVII^th International Conference of the Applied Econometrics Association in Maastricht (AEA 1997), the following dealt with estimates of private rates of return:[57]

- *Finland*: Returns to human capital in the private and public sectors in Finland (R. Asplund).
- *Sweden*: Estimates of the returns on education from a non-stationary dynamic programming model (Ch. Belzil; J. Hansen).
  Omitted ability bias and the wage premium to schooling: New Swedish evidence (Ch. Kjellström).
  College investments and college wage premium in Sweden (J. Hansen).
- *France*: The value of school in the career of French engineers: A secure labour market in a changing world (J. Bourdon).
- Other papers examined the degree of mismatch (in particular over-/undereducation) in different countries, the impact of technological changes on education and training, the links between training and employment, and other issues.

Highlights of these and other papers presented are (Hartog 1997 with reference to Psacharopoulos 1985 and 1993):

- private rates of return are higher than social rates of return. This means that negative impacts of the educational expansion (e.g. retraining, social transfer payments) are borne by society, the returns, however, are for the benefit of individuals;
- rates of return decrease with higher levels of education and training, but all are still positive;
- due to the allocational impacts of the labour market, long-term rates of return are dependent on the variation of the supply of and the demand for qualifications;
- rates of return decline with an increasing level of development of a country.

Costs and benefits to enterprises[58]

In the neo-classic view, enterprise growth depends on: *(figure 2-14)*

- investment in personnel (recruitment, initial and continuing training, work organisation);
- net investment in physical capital (equipment, buildings, stock, shares);
- innovations (new products, production processes, marketing);
- investment in R&D, licences, etc.

These investments increase the stock of human and physical capital, technical and organisational experience and knowledge and thus capacities and performance.

Not least, enterprise growth thus depends, among other things, on the economic success of human capital investments, i.e. on the difference between discounted flows of costs and benefits. Here, companies have to decide whether to recruit on the external labour market or to train young people and/or conduct continuing training of their staff. The question to be answered is: why should enterprises invest in training even though they do not acquire property rights over the qualifications?

This question has been answered by human capital theory based on the early works of Schultz (1963),

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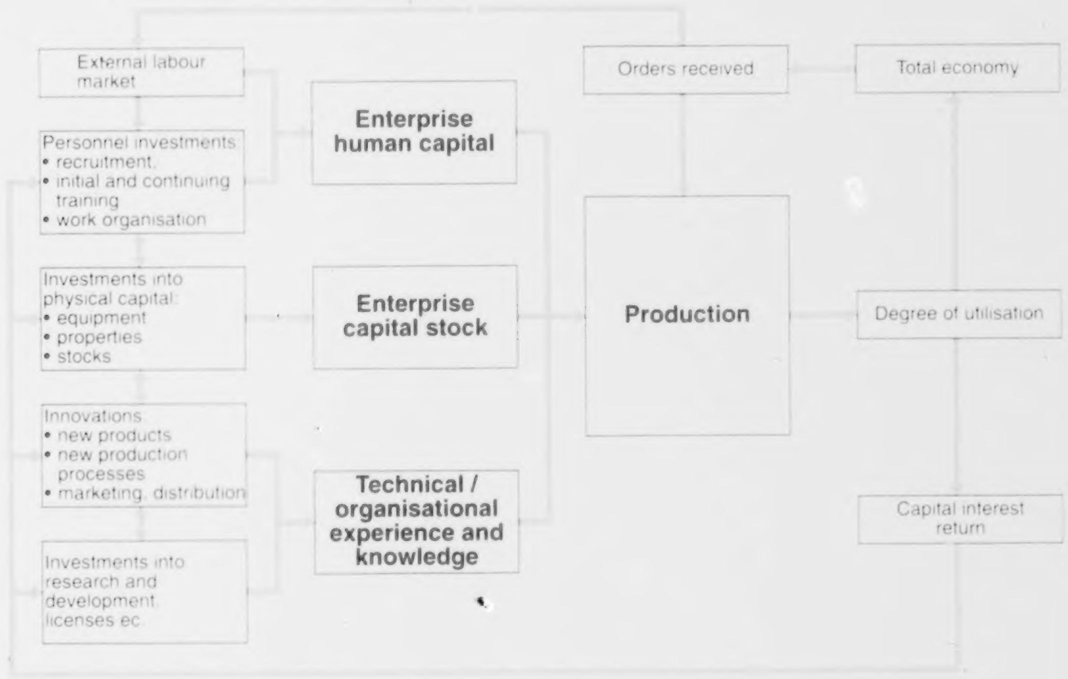
57) Due to the limited space available here, it is impossible to comment all of them in detail. The conference results are being published; for further details contact: ROA, Maastricht, which organised this conference.

58) *This section is in parts based on the contributions of W. Kau and J. Tacq/C. Peeters/P. Ryssegal 1997)*

Figure 2-14: Factors for enterprise growth and employment


External labour market
Personnel investments:
• recruitment,
• initial and continuing training
• work organisation
Investments into physical capital:
• equipment
• properties
• stocks
Innovations:
• new products
• new production processes
• marketing, distribution
Investments into research and development, licenses ec.
Enterprise human capital
Enterprise capital stock
Technical / organisational experience and knowledge
Orders received
Production
Total economy
Degree of utilisation
Capital interest return

Source: Kau 1997 (following Graff 1995, Tessaring 1997a, Ballot et al. 1997)

Denison (1962), Becker (1964a, b), Mincer (1974) - to mention only a few - and subsequent studies.

General and specific training: Cui bono?

Becker (1964a) distinguishes between two basic types of vocational training - general and specific.

Perfectly *general (i.e. transferable) training* increases the value of human capital by the same amount for all firms. Therefore the training firm must pay the worker the full value of his marginal product, or face the risk of poaching - another firm in the industry can pay the worker the full market value of his or her labour, without having to pay for the training. Under these circumstances, economic logic dictates that the worker should bear the full cost of general training, since he gains all its benefits.

Perfectly *specific training* has no value to any firm other than the one providing the training. Since this training increases the worker's productivity only in the training firm, the wage he or she can command elsewhere does not increase as a result of the training. The benefits of perfectly specific training thus accrue entirely to the training firm, which should therefore bear all the costs of the training investment.

In both cases, perfect information on skills amongst workers and employers should lead to an efficient level of both general and specific training: workers decide to invest in general training, and employers in specific training, only if the benefits of training are greater than the costs.

However, a number of factors can prevent this from being the case. The first of these is the fact that training is in reality neither perfectly general nor perfectly specific, but will tend to increase a worker's marginal product by different amounts in different firms. Thus the costs of vocational training are likely to be shared between workers and employers.

A second problem arises because neither firms nor individuals have perfect information: firms may be reluctant to invest in training because the worker may leave the firm after training, thus robbing the firm of the benefits of the investment. Equally, individuals may be uncertain of the returns on training and may be reluctant to make the investment.

Other market imperfections may occur if workers trained in a firm are de facto immobile and wages could remain below those paid elsewhere, or if enterprises do not know the precise costs and benefits of their training. In addition, most firms tend to short-term planning of their training and human resource investments. In this case the costs incurred in the short term are not compared to the longer-term returns on a higher qualification of their personnel.

A further kind of imperfection arises if firms do not consider opportunity costs, in particular those for searching for, initiating and training workers recruited from the external labour market (Franz/Soskice 1995).

> Faced with these and other labour-market imperfections, an argument for State intervention in the provision of training can be put forward, if training, in particular for broad transferable skills, is held to be important for economic growth but, for various reasons, may not be fully provided by the private sector or individuals.
>
> If individuals and firms are unable or unwilling to provide the necessary investment in training, the public sector may provide assistance, in various ways. State subsidies and controls can be used to induce firms to provide training for workers if the market fails to generate the desired levels of training. This may appear to be the logical course of action; there is no incentive for firms to provide training in broad transferable skills on which they have no subsequent claim.

Empirical evidence

Figure 2-15 illustrates the types of costs and benefits to be considered in enterprise training. Concerning the costs, a distinction must be drawn between total costs of training and partial costs. The difference between both are those costs which occur independently of training, e.g. the wages of sideline training personnel.

Relatively few research studies have been done on enterprise costs and benefits of training outside those countries with a training system which is largely organised by and within enterprises. These countries are Austria and Germany, and, to a lesser extent, Denmark and The Netherlands. In the UK a modular enterprise training system is predominant which, however, does not distinguish between addressees or between initial training and continuing training. In France, Italy and Spain, apprenticeship training is still in its prime; vocational schools are predominant.

Germany

In Germany, surveys on enterprise training costs and returns were carried out in 1971, 1980 and 1991[59]; the 1991 results have been updated by BIBB up to 1995 (Bardeleben et al. 1991, 1997; Kau 1994). The 1991 survey covered manufacturing, trade and the craft sector. Total gross expenditure in 1991 totalled almost DM 30 000 per apprentice and per year. Deducting the enterprise returns of an apprentice (productive work, DM 11 700), the total net expenditure fell to less than DM 18 000.[60]

However, part of that expenditure is also incurred without any training, in particular the costs for sideline trainers. Total net expenditure minus those "costs not relevant for training decisions" then decline further, to around DM 10 400 in industry and trade, and to less than DM 2 000 in the craft sector.

Table 2-9 illustrates these findings in more details.

Austria

The apprenticeship system in Austria is primarily to train young people with a lower educational background; intermediate and higher vocational routes are more important than they are in Germany.

In 1990 and 1995 two surveys on enterprise training costs were carried out (Stepan et al. 1994; Lassnigg/Steiner 1996). Like the German model, the Austrian cost surveys distinguish between total costs and partial costs. Compared to Germany, the personnel costs for apprentices are around 10% higher in Austria;

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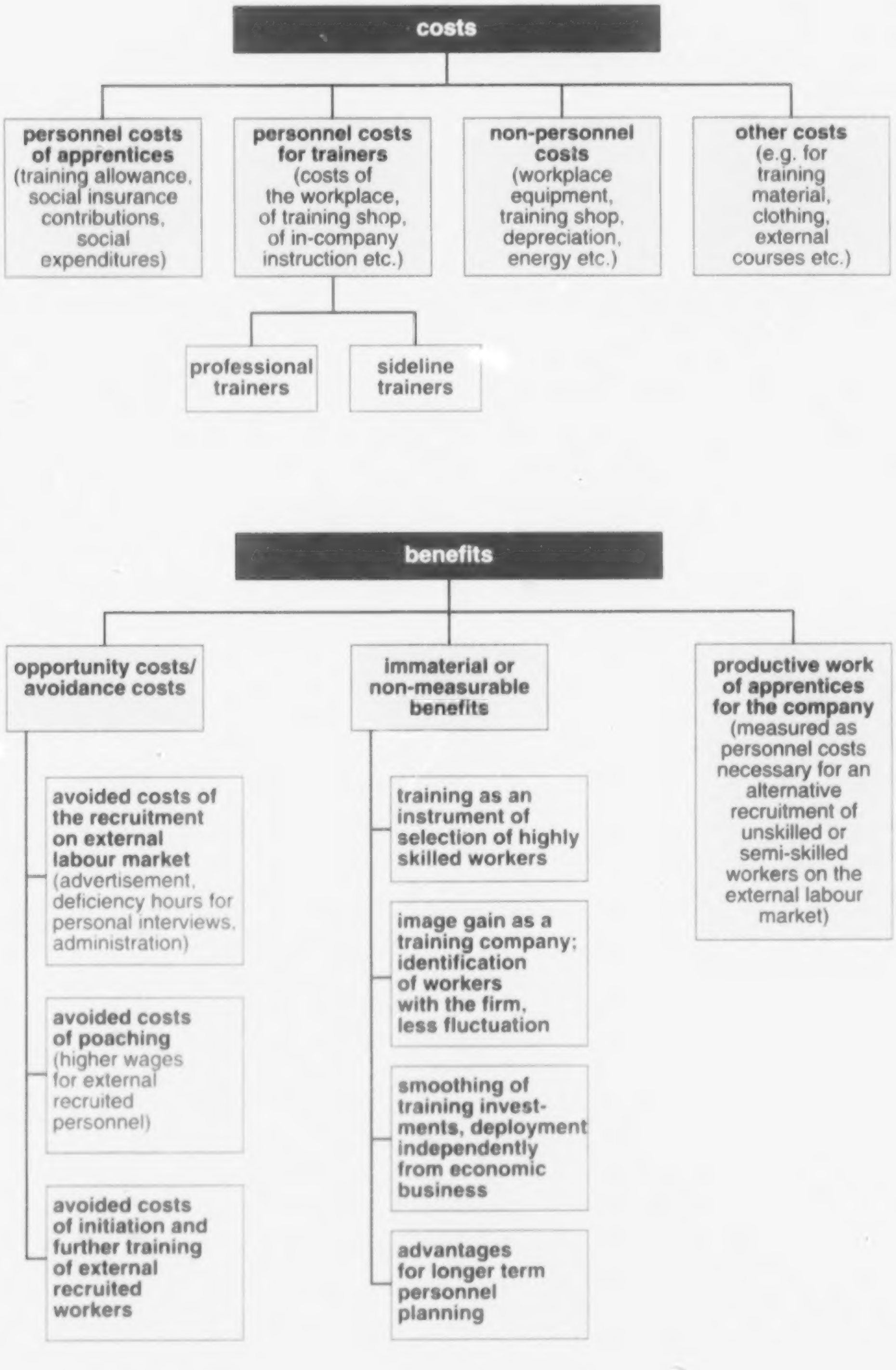
[59] For various reasons, however, these surveys are not fully comparable with each other.

[60] Note that the average duration of enterprise training in Germany is around 3 years.

Figure 2-15: Components of costs and benefits of enterprise training


costs
personnel costs of apprentices (training allowance, social insurance contributions, social expenditures)
personnel costs for trainers (costs of the workplace, of training shop, of in-company instruction etc.)
non-personnel costs (workplace equipment, training shop, depreciation, energy etc.)
other costs (e.g. for training material, clothing, external courses etc.)
professional trainers
sideline trainers
benefits
opportunity costs/ avoidance costs
immaterial or non-measurable benefits
productive work of apprentices for the company (measured as personnel costs necessary for an alternative recruitment of unskilled or semi-skilled workers on the external labour market)
avoided costs of the recruitment on external labour market (advertisement, deficiency hours for personal interviews, administration)
avoided costs of poaching (higher wages for external recruited personnel)
avoided costs of initiation and further training of external recruited workers
training as an instrument of selection of highly skilled workers
image gain as a training company; identification of workers with the firm, less fluctuation
smoothing of training investments, deployment independently from economic business
advantages for longer term personnel planning

Source: Kau 1997

Table 2-9: Average costs of apprenticeship training in manufacturing, trade and craft sectors; West-Germany 1991 (1000 DM)

type of costs	industry and trade sectors	craft sector
1 Personnel costs for apprentices	15.9	11.3
2 Costs of professional trainers	1.8	0.2
3 Costs of sideline trainers	10.1	10.6
4 Material costs	1.3	0.7
5 Others	2.6	2.0
6 Total gross expenditures (sum 1-5)	**31.8**	**24.9**
7 Returns (equivalent expenditures)[1]	**11.3**	**12.5**
8 Total net expenditures (7-6)	**20.5**	**12.4**
9 Partial net expenditures (8-3)	**10.4**	**1.7**

1) productive work of apprentices, weighed by wages alternatively to be paid to unskilled or semi-skilled workers
Differences by rounding
Source: Kau 1997

all other expenditure is lower. Thus, the total gross expenditure in Austria was 31% lower than in Germany

On the other hand, the returns on training due to productive work of apprentices are almost 20% higher in Austria. Balancing total gross expenditure and returns, the annual cost of training one apprentice in Austria is less than half (ÖS 68 000) the cost in Germany (ÖS 144 000).

United Kingdom

A survey carried out by the Industrial Society (1996) among its member firms[61] found that the average annual costs for training and continuing training were around ECU 521 (manufacturing: ECU 572, services: ECU 399) per apprentice. Expenditure per capita tends to decrease; moreover, workers on part-time and fixed-contract basis are increasingly under-represented within continuing training.

In contrast, a survey carried out in 1993 by IFF Research (1996) reveals that a growing number of firms, in particular bigger enterprises, use "open learning"[62] as a (cheaper) alternative to on-the-job training: around 90% of bigger enterprises, 60% of medium-sized enterprises and 20% of small enterprises make use of this kind of learning and training.

In addition, the IFF survey shows that on average almost every second employee received a continuing training of four days per year. The costs for continuing training include all categories of gross expenditure mentioned above; returns on opportunity costs, however, were not asked for. Total expenditure for the whole UK was estimated at around ECU 15 billion or ECU 830 per capita of the labour force. It is surprising that the per capita expenditure is significantly higher for smaller enterprises.

Other countries

Very little data on enterprise costs and benefits of training is available for other countries.

- In *The Netherlands*, the total cost of internal and external continuing training borne by firms is estimated at NLG 3 billion per annum in 1990 (OSA 1994). The expenditure of the labour administration for apprenticeship training totals NLG 260 billion; the respective costs of enterprises are not known. The OSA estimates that they exceed public expenditure substantially.
- For *France*, no comparable analyses of enterprise costs and benefits were available. It should be noted that the French system of vocational training is based on a training levy which is compulsory for all enterprises with more than 10 em-

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61) However, out of 3 800 companies asked only 400 participated in the survey.

62) Open learning denotes a form of training organised outside the firm. The learner is being supported by the firm, concerning evening courses, distant courses or provision of software programmes.

ployees. This levy is targeted at continuing training and currently stands at 1.5% of the total gross wage bill (0.9% is assigned to the continuing training of staff, 0.4% to settling-in allowances and 0.2% to educational leave). Smaller enterprises have to pay a training levy of 0.15%.

In addition, enterprises in manufacturing, trade and the craft sectors are obliged to pay an apprenticeship tax (0.5% of the gross wage bill). The actual training expenditure of enterprises, however, exceeds these levies: In 1993 it stood at 3.5% of the gross wage bill (Jeger 1997).

3.4 Productivity and skills in EU manufacturing sectors[63]

This chapter summarises the analyses of the effects of intermediate and high-level skills on both the level and growth of productivity in manufacturing sectors in seven Member States of the European Union (B, DK, D, E, F, NL and the UK).

The analyses carried out by Cörvers (1997a) distinguish and estimate four effects of skills on sectoral productivity:

- The *worker effect*, which indicates the marginal productivity of education with respect to the production of goods; the assumption which is to be proved is whether educated workers are more efficient in their work.
- The *allocative effect* refers to an assumed higher efficiency of allocating all production inputs to the production process, e.g. by making better decisions based on the information available.
- The *diffusion effect* assumes that a higher level of education increases the ability to discriminate between more and less profitable innovations and reduces the uncertainty about investment decisions with regard to new processes and products.
- The *research effect* refers to the whole of education as an input factor in R&D activities and thus as a key factor for technological progress and productivity growth.

Worker and allocative effects are of static, diffusion and research effects of dynamic character. It has been argued that the static effects of human capital[64] increase the productivity *level*, whereas the dynamic increase the productivity *growth*.

If the worker and allocative effects are large relative to the employment shares of intermediate or highly-skilled workers, both profits and productivity can be increased by further human capital investments. In that case under-investment in human capital is indicated. If the effects are relatively small, over-investment in human capital is likely. However, once the positive dynamic effects of human capital on productivity growth are also included in the analysis, over-investment in human capital may no longer be evident.

The manufacturing sectors distinguished are divided into three categories of sectors employing different proportions of highly-skilled workers: low-skill sectors, medium-skill sectors and high-skill sectors.

Least squares estimates for the countries under consideration showed, for the period 1988 to 1991, that the effects of intermediate and highly-skilled labour on sectoral labour productivity, which reflect the worker and allocative effect, are significantly positive for all categories of sector, except for the effect of highly-skilled labour in the category of high-skill sectors.

A closer look at the individual sectors was taken to judge whether there is under or over-investment in intermediate and high skills.

The output elasticities estimated with respect to the employment shares of *intermediate-skilled workers* are negative or small for most manufacturing sectors in Germany and Denmark. This implies that from a *static* point of view there is over-investment in intermediate skills in most German and Danish manufacturing sectors. On the contrary, the output elasticities are relatively large in the manufacturing sectors of Spain, France and the United Kingdom, which may point to under-investment in intermediate skills in these sectors.

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[63] *This section summarises the contribution of F. Cörvers (1997a): Sector-specific intermediate and high skills and their impact on productivity and growth in manufacturing sectors of the European Union (cf. also Cörvers 1997b).*

[64] Human capital is measured here by the employment shares of intermediate and highly-skilled workers.

However, a static analysis of the worker and allocative effects for intermediate and highly-skilled workers does not account for the *dynamic* effects on productivity growth.

Least square estimations to explain sectoral productivity growth showed that the diffusion effect of high skills in the high-skill category of sectors is significantly positive. Moreover, there is some evidence of the diffusion effect of intermediate and high skills in the low-skill category of sectors.

Therefore the diffusion effect of intermediate and high skills on productivity growth casts doubt on the apparent over-investment in intermediate skills in the German and Danish manufacturing sectors, as well as on the apparent over-investment in high skills in several sectors. In other words, it may be wrong to conclude from a static analysis alone that there is over-investment in intermediate and high skills in some manufacturing sectors.

> The diffusion effect of intermediate skills in the low-skill sectors provides additional evidence for the conclusion that the employment share of intermediate-skilled workers in the Spanish, French and British manufacturing sectors is too small.
>
> From a static point of view, an increase in the employment share of intermediate-skilled workers may raise both profits and the productivity level in these sectors, whereas from a dynamic point of view, an increase in the employment share of intermediate-skilled labour may stimulate the introduction of new technologies and thus productivity growth.

3.5 Conclusions

V. Lith (1997) formulates several proposals for improved institutional conditions and more transparency in the costs and benefits of education and training, which could serve as guidelines for decisions and policies.

Improvement of institutional prerequisites

Costs and services provided by schools and universities could be improved by a system of regular reporting on staff and equipment, pupil-teacher ratios, lessons cancelled, drop-outs, practical orientation, graduates, transition to the labour market, and specific services (e.g. bridging courses, support for weaker pupils, international exchanges, etc.).

If schools and universities act more independently, they must not only be rewarded for their services, but be responsible for their decisions. This may lead to more competition to attract young people and to a competitive discovery of costs and benefits.

The State should define its primary function as designing standards and the conditions for order and competition. It should be able to distinguish between educational funding and educational subsidies: It should provide educational funding subsidiarily for individuals; subsidies are targeted interventions in order to secure certain services or to correct failures.

Transparency on costs and benefits

The age and qualification dependency of educational returns should be made more transparent. Available research indicates that returns are higher for younger people and for the higher skilled. Monetary returns which in most analyses are positively related to education and training, should also take account of other influencing factors, e.g. work experience, talent, social environment, family background.

Research reveals that in most cases the returns on education are lower for women than for men. This is partly due to more part-time work being done by women and their longer absence from the labour market, but also to unequal work and career conditions. Because wage differentials for women are more marked than for men, a higher level of education and training will yield higher returns for them than for male workers.

Returns on education decrease as the level of education and training increases. This is due to the rising cost of higher levels of training and university studies. In addition, returns on vocational training seem to be lower than those on general education and training. This, however, has to be interpreted with caution: the complementarity of general and vocational training renders an exact assessment difficult; moreover, general training at schools is often subsidised by the State and these costs are not always made transparent.

Monetary returns on private training investments tend to be higher than those on public training programmes. In addition, returns are higher for the training or re-training of older adults (and in particular for the lower skilled) and should be preferentially subsidised by the State - also for reasons of social equality and social cohesion.

There seems to be a danger of an increasing shift between individual rationality and macro-economic efficiency. For the individual who bases his decisions on the ex-post situation, the achievement of a higher level of education and training is expected to enhance the chances of a higher income and better career opportunities and will thus be rational. If these chances can no longer be fulfilled in future, however (for example in case of growing surpluses of more highly qualified people), this will result in economic inefficiency.

To avoid those failures, information should be improved and a decentralised and competitive education system created. Moreover, investment in training and capital investment should be treated equally in company balance sheets, as proposed in the White Paper of the European Commission (1995a).

4 Labour market and skills

Unemployment and inappropriate employment are regarded as the most crucial problems of contemporary societies.

Unemployment is a heavy burden put on individuals and entails social costs and long-term consequences for society in terms of growth and competitiveness. More "hidden", but nonetheless connected with individual and social costs - monetary and non-monetary ones -, is the phenomenon of inadequate or inappropriate employment, often designated "over-education", "under-utilisation" or "deskilling", which is gaining increasing attention in research and policy. Not only previous "investments" by individuals, firms and the State in education and training, and the consequent limited scope for future-oriented investment in other areas, are questioned but also the responsiveness of VET systems to changing skill requirements.

4.1 Employment structures and prospects

Statistical data on employment structures by sector, occupation and skill in the European Union are regularly published by Eurostat and/or the European Commission. The main source is the European Labour Force Survey (LFS), carried out annually. The results are to be found in following publications of the European Commission/Eurostat:

- "Employment in Europe";
- "Employment and unemployment";
- "Labour force survey"
- and in other publications, e.g. the "Key Data on Vocational Training in the European Union", published for the first time in 1997 (jointly with CEDEFOP).

The series "Employment in Europe" contains key employment indicators for all Member States and for the entire EU. The text presents and comments on trends and prospects in employment and unemployment. There are also analyses of selected subjects. The subjects of interest for vocational training are, for instance, those touched on in the 1996 issue: education levels of the workforce, features of the unemployment problem, job creation and loss, structural changes in employment. The 1997[65] issue focuses on: demographic trends and prospective changes in the Union's labour force, geographical labour mobility, employment in services and the employment situation of people with disabilities.

Additional data is supplied by the *Ad Hoc* Labour Market Survey carried out by the European Commission and national institutions in 1994 (European Commission 1995c; Hoffmann 1995).[66] Some of the results as regards skills and qualifications are:

According to the ad hoc survey, the share of skilled jobs is surprisingly high in industry and in the retail trade (70% of all jobs). There are also no significant differences between small/medium-sized and larger enterprises. Significant deviations in the distribution of skilled jobs, however, are found for male and female workers: in industry, out of all female workers 57% work in a skilled job (males: 73%), whereas in the retail trade there are less significant differences (males: 77%, females: 73%). Here again the discrepancies between EU countries are rather high.

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65) The 1997 issue was published in November 1997 and could not be assessed for this report.

66) In the survey more than 23 000 European enterprises in industry and around 10 000 retail trade firms participated. They employ 7.4 million and 1.9 million workers respectively. In addition, around 10 000 workers and unemployed people were included. A previous survey with mostly identical questions was carried out in 1989, thus allowing for comparisons over time.

Asked about the prospects for the coming 1-2 years, employment in industry should decline substantially, but with significant deviations[67] according to qualifications and time in work.

Table 2-10 illustrates that job losses in industry will be significantly above average for unskilled workers, for larger firms and for full-time jobs. In the retail trade, there may even be an increase in jobs for skilled workers, in particular in part-time jobs. Jobs for the unskilled will remain stable with a slight negative trend, but will shift more and more to part-time work.

Asked for the reasons, above all negative demand expectations are mentioned. Further important determinants for industry were rationalisation and new technologies, and for the retail trade wage costs, in particular additional wage costs.

Table 2-10: Employment prospects for skilled and unskilled workers in industry and retail trade by working time and size of enterprise 1994, EU (index)[1]

	skilled workers			unskilled workers		
	total	full time	part time	total	full-time	part-time
industry						
total	-17	-19	+6	-33	-36	-3
size:						
<200	+6	+6	0	-11	-11	-1
1000+	-48	-51	+11	-56	-60	-2
retail trade						
total	+6	+1	+10	-1	-7	+3
size:						
0-4	+1	-3	+1	+2	0	0
50+	+19	+9	+23	+5	-5	+10

[1] balance of % increase - % decrease of jobs
Source: Hoffmann 1995

4.2 The challenge of unemployment

Unemployment occurs:

- if the number of available jobs in the economy as a whole or in specific segments falls short of the number of people who wish and are available to work (job shortage);
- or if the potential labour force exceeds the number of available jobs (supply surplus).

> These definitions refer to different reasons for unemployment, although both components are responsible for present unemployment.[68] And it requires specific attention for policy makers to find the appropriate measures for both, increase in jobs and supply oriented policy, e.g. by a redistribution of the volume of labour.[69]

Without referring here to the long list of research devoted to explaining and measuring unemployment[70], one should note that unemployment (Franz 1996):

- means renunciation of income and production;
- generates high fiscal costs, either direct costs (expenditure e.g. on unemployment benefits and shortfalls in revenue from taxes and social insurance contributions)[71] or indirect costs (e.g. psycho-social impacts or criminality), which are difficult to measure, however;
- impedes investment in productive and innovative areas where additional jobs may be created; this could lead to a self reinforcement of unemployment;
- increases inequality because unemployed people face greater welfare deficits as employed persons;
- causes considerable strain for the persons concerned who feel that they are no longer useful or - if they are young people - that they are being denied future prospects.

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[67] Out of the three categories asked for (employment will increase/remain stable/decrease), we have taken the balance between "increase - decrease" in order to gain a better picture of the trends.

[68] In Germany throughout the eighties, the first reason was prevalent, due to declining job numbers (Klauder 1990).

[69] The labour volume is the number of gainfully employed multiplied by working hours.

[70] Cf. for example Franz 1996 and the extensive literature given there.

[71] The White Paper of the European Commission on "Growth, competitiveness, employment" (1993) estimates the direct costs of unemployment to be ECU 210 billion in 1993, i.e. 4% of the total GDP of the Union. Not included are decreases in indirect tax revenues and social costs.

Unemployment and the matching process

Unemployment is not well-delimited but rather a phenomenon which can be classified by reasons, time patterns, personal attributes, statistical coverage, etc. The *box* gives an overview of some current definitions of unemployment.

Different types of unemployment - it goes without saying that there is always a combination of reasons, time and individual patterns - require targeted policy measures. The following chapters will, after a discussion of the matching process and of overall unemployment, focus on several manifestations of unemployment.

Supply of and demand for labour are matched on the labour market. The matching process starts with a search by workers, unemployed people or school-leavers looking for a (new) job and by firms looking for people to fill a vacant (or newly created) job. Different factors determine the duration and efficiency of these search processes and the conditions for concluding or for terminating an employment contract. Hirings and dismissals create the fluctuation or turnover of workers and jobs.

Important factors influencing the matching process and the rate of fluctuation are skills, work experience, tenure and age/sex, with fluid demarcations. Empirical data confirms on the whole that mismatch tends to be greater at the beginning of working life or where work experience is short; higher fluctuations are characteristic of younger workers, and in particular of young women, and of smaller enterprises (Franz 1996).

In the past 20 years the matching process has apparently become less efficient. This can be demonstrated by the *"Beveridge curve"*, the relation between unemployment rates and vacancy rates. In Germany, as in other countries (e.g. Padoa-Schioppa 1990, cit. in Franz 1996) in 1967 both the unemployment rate and the vacancy rate were around 2%, and in 1980 around 4%. This means that in 1980, compared with 1967, double the number of workers and vacant jobs could not be matched. In 1994 the vacancy rate dropped again to around 2%, but the unemployment rate increased to more than 9% (!).

Matching processes can be alleviated by the flexibility of workers and jobs, in particular by occupational and regional mobility. Mobility and the search process can be supported by information, vocational guidance or by placement agencies - but also by recognition of certificates.[22]

> Although there are a number of research analyses on occupational or qualification mismatches ("skills gaps") in almost all Member States (see the following sections), they are hardly comparable with one another, mainly due to different definitions and delimitations of occupations and qualifications. A comparative study of the profiles of job vacancies and their requirements on the one hand, and of the qualification/occupational profiles of the unemployed or job seekers on the other hand, would give valuable information on the mismatch dimension in the EU and the ways different countries and VET systems have responded.

Unemployment and skills in Europe

Since the "first energy crisis" (1973), unemployment, with variations, has risen continuously and become persistent – and many people, policy-makers and firms have got used to it.

Recent findings in the EU Member States indicate that the problem of unemployment is far from being resolved. Although a considerable number of jobs have been created in recent years, there were not enough to reduce unemployment significantly – on the contrary: unemployment in the EU has tended to increase since 1995 after falling from the peak unemployment rates in 1994.

According to Eurostat data (1997c)[23], the annual unemployment rate in EUR 15 increased from 8.2%

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[22] Aspects of international mobility will be discussed in Part Five; information and guidance in Part Three.

[23] Eurostat defines unemployment (in accordance with the ILO guidelines 1982) as persons over 15 years of age who are without work, actively seeking employment during the last 4 weeks and are currently available to start work within the next 2 weeks. The unemployment rate is defined as the number of unemployed persons as percent of the labour force (unemployed + active population). The annual unemployment rates are based on the results of the EU Labour Force survey which takes place in the spring of every year.
For a more balanced interpretation of comparative labour market conditions alternative unemployment indicators have been developed by the US Bureau of Labour Statistics, including, among else, long-term unemployment, job looser rates, full and part-time unemployment, discouraged workers (cf. Sorrentino 1993).

Definitions and categories of unemployment

reason, causes	• mismatch unemployment concerning qualifications of unemployed and skill requirements of job vacancies • mismatch unemployment caused by regional disparities of unemployed and jobs Both kinds of mismatch unemployment are summarised as "structural unemployment" • frictional unemployment which denotes the "normal" time of unemployment during job search • technological unemployment arises by increased substitution of labour by physical capital, in particular by use of new technologies and automation
time patterns	• hysteretic (delayed) unemployment caused, among else, by skill obsolescence and selection: unemployment induces an ever higher unemployment level in the subsequent periods • cyclical unemployment refers to unemployment change in the course of business cycles • seasonal unemployment occurs by different production cycles in an annual period (e.g. in agriculture, tourism) • duration of unemployment refers to the period of unemployment; measured either by registration at a fixed date (incomplete duration of unemployment) or by observation over a period of time (completed duration) • periods of unemployment denote the numbers of (individual) unemployment cases within a period • transitional unemployment refers to a period in biography where transitions take place (e.g. from education or training into work, re-entry during working life, unemployment before retirement etc.)
personal/ socio-economic attributes	• unemployment can be broken down by all personal characteristics, in particular gender, age, nationality, ethnic origin, disability etc. • unemployment by socio-economic characteristics, e.g. occupation, sectors, qualification, field of study, or social background
statistical coverage	• personal assessment e.g. in an enquiry • registered unemployment, with different ways of reporting in different countries; main prerequisite: availability • hidden unemployment can take various forms, e.g. – "second labour market" i.e. former unemployed given public financed work or training in job creation schemes or similar measures – longer staying in education or training because of expected unemployment – early retirement schemes to avoid registered unemployment – workers who retrenched from looking a job (discouraged workers) or are not or no more registered but would work in case of a job offer – additional workers who would take a job because of family or household situation (e.g. in case of unemployment of the partner)

(1991) to 10.9% (1996), with significant variations among the different countries, however *(table 2-11)*.

It is since long confirmed in almost all EU and other countries that there is an inverse relationship between the level of education and training on the one hand and unemployment rates on the other. Reasons that were discussed above are the processes of screening and credentialism, but also the assumed higher productivity of better qualified people. Apparently employers not only associate higher skills with specific performance capabilities, but also with the social and flexible competencies increasingly required in the course of technical progress.

Another argument for lower unemployment among skilled and highly skilled people is that there is an excess supply in the course of educational expansion and employers can hire skilled people on a wage level previously valid for less skilled people. We saw in chapter 3.3, however, that this argument is not generally valid. Thus, productivity, credentialism and structural change in the economy, with a shift to higher qualified sectors and rising skill requirements in all sectors, work together.

Table 2-11: Unemployment rates in the European Union, the USA and Japan by gender and age; 1996 (%)[1]

	total labour force			less than 25 years olds		
	total	**male**	**female**	**total**	**male**	**female**
B	9.8	7.6	12.8	22.9	19.4	27.2
DK	6.9	5.5	8.5	10.6	8.8	12.6
D	9.0	8.1	10.2	9.6	10.3	8.8
EL	9.6	6.0	15.3	31.0	21.4	41.1
E	22.1	17.5	29.5	41.9	36.2	48.7
F	12.4	10.6	14.6	28.9	26.0	32.1
IRL	11.8	11.6	12.0	18.1	18.9	17.2
I	12.9	9.4	16.3	33.5	29.2	38.9
L	3.3	2.5	4.7	9.1	9.9	8.2
NL	6.3	5.0	8.2	11.5	10.8	12.2
A	4.4	3.7	5.3	6.0	5.0	7.1
P	7.3	6.5	8.3	16.7	14.3	19.9
FIN	15.9	15.4	16.4	38.1	37.4	39.0
S	10.0	10.5	9.4	21.1	21.7	20.4
UK	8.2	9.5	6.5	15.5	18.0	12.5
EUR15	10.9	9.6	12.6	21.8	20.6	23.3
USA	5.4	5.4	5.4	12.0	12.6	11.3
JAP	3.4	3.4	3.4	6.7	6.8	6.5

1) unemployed as percent of labour force (annual average)
Source: Eurostat: Arbeitslosigkeit in der Europäischen Union 7/1997

Data on unemployment and qualifications show deviations with regard to different countries and national data sources, which cannot be presented here in detail. A comparison of statistics from different sources should be done very carefully. Thus, for example, Eurostat relates unemployment rates to the 25-59 years olds, and OECD to people between 25 and 64 years of age.[74]

Table 2-12 shows the unemployment rates for different levels of education and training in EUR 15. In younger age-groups, and much more so in the older ones, unemployment rates among less qualified people (ISCED 0-2) are significantly higher than those of higher qualified people. It also becomes obvious that females are more affected by unemployment than males although for females, too, there is a close link to their level of qualification.

Again, the differences between countries are enormous. *Table 2-13* illustrates unemployment rates by qualification in different EU countries according to Eurostat data. There are only a few countries where this inverse relation between unemployment and qualification does not exist: in Greece and Portugal unemployment among people on ISCED 3 level is higher than among the less qualified; in Italy and Luxembourg, unemployment rates among the highly qualified (ISCED 5-7) exceed those of people with intermediate qualifications.

Long-term unemployment

Another phenomenon of the growing incidence of mismatches and hysteresis on the labour market is long-term unemployment[75], which refers to people for whom unemployment is not merely a short episode but has become a serious and often existential problem.

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74) In addition, there are different definitions of educational attainment. Eurostat (in: Education across the EU, 1996) has defined a combined variable "education and training level achieved" out of two questions in the labour force survey (question for attained general level of education, and for attainment of vocational or university training), whereas OECD refers to the conventional ISCED nomenclature.

75) Duration of unemployment of one year or more

Table 2-12: Unemployment rates by educational attainment, age and gender 1995; EUR 15 (%)

	25 to 29 years olds			30 to 59 years olds		
	total	male	female	total	male	female
ISCED 0-2	22.2	20.5	24.7	11.4	10.3	12.9
ISCED 3	14.1	12.4	16.1	7.6	6.2	9.4
ISCED 5-7	-	-	-	4.7	4.2	5.5

Source: EU Commission/Eurostat/CEDEFOP: Key data, 1997

> "Hysteresis" denotes that unemployment tends not to change parallel to economic business cycles but remains on an ever higher level after an economic recovery.
>
> The existence of hysteretic unemployment is mainly attributed to an increasing "structural unemployment" with growing numbers of people who have been "sorted out" during the recession period and whose skills have become obsolete. Many of them are thus not offered a job even in cases of increasing numbers of vacancies. This is one main reason for the persistence of unemployment.

Long-term unemployment, according to a recent analysis, is a much greater problem than was assumed up to now; the share of long-term unemployed, when measured correctly, is more than twice as high as reported in official figures (Karr 1997).

Table 2-13: Unemployment rates by level of educational attainment[1]; EU 1994 (%)

country	ISCED 0-2	ISCED 3	ISCED 5-7
B	12.5	7.5	3.7
DK	12.6	8.3	4.6
D	14.8	8.9	5.3
EL	6.2	8.3	5.3
E	22.4	20.0	15.1
F	14.8	9.7	6.6
IRL	21.0	9.1	5.3
I	9.3	7.4	8.1
L	3.7	1.9	2.4
NL	12.6	7.7	5.5
P	6.1	6.4	2.4
UK	11.2	7.9	4.1
EUR12	13.2	8.8	6.1

1) 25-59 years olds

Source: Eurostat: Bildung und Berufsaussichten. 1995

In 1996, according to "official" statistics based on the stocks of unemployed (with incomplete duration of unemployment)[76], the percentage share of long-term unemployed among all unemployed stands at 31.9% in West Germany, 33.7% in France and 35.7% in England.

> It is shown using flow data that the usual practice of counting long-term unemployment in these three countries under-reports the volume of long-term unemployment systematically and on a large scale. In the past 10 years in West Germany, periods of unemployment lasting one year or longer constituted more than 50% of total unemployment; at present (1996) it stands at 58.4%. The under-reporting of long-term unemployment is even higher in England and France; in both countries long-term unemployment at present accounts for more than 67% of total unemployment (Karr 1997).

Similar results are published by the European Commission (e.g. in: "Employment in Europe 1996") although the figures for the three countries mentioned above are not comparable: long-term unemployment as a percentage of total unemployment increased from 41% to 50% (EUR 12) in the period 1992 to 1995.

According to Eurostat data, the above-average relative increase in very long-term unemployment - lasting two years or more - has risen alarmingly from around 23% to 30% among all unemployed in the past few years, with equal shares of males and females (European Commission: Employment in Europe 1996). This appears to be a strong confirmation of the hypothesis of hysteresis and structural unemployment discussed above. Even economic re-

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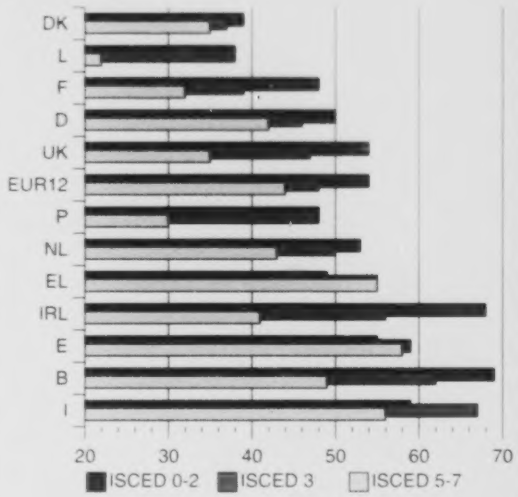
76) The numbers of unemployed are usually registered at a certain date; the further (complete) duration is not known; therefore

covery with rising job numbers does apparently not solve the problem of long-term unemployment (Werner 1996a).

Looking at the long-term unemployment of different skill levels, we again find that intermediate and higher educated people are less affected (Eurostat 1995b). This is true for the whole Union except Spain and Greece, where long-term unemployment is higher on ISCED levels 3 and 5-7 compared to levels 0-2; for Italy, where long-term unemployment is the highest on ISCED 3 level and for Luxembourg and Portugal where the ratios of ISCED levels 0-2 and 3 are equal *(figure 2-15a)*.

Figure 2-15a: Long-term unemployment by educational attainment, EUR 12, 1994 (%)[1]



1) % of total unemployed: age 25-59 (countries sorted by ISCED 3 level)
Source: Eurostat: Bildung und Bildungsaussichten

4.3 Inappropriateness of skills, over- and undereducation

Increasing research work in Europe and elsewhere is devoted to the question of "over-education"[77] and "under-utilisation" thus indicating the qualitative side of "skills gaps".

Qualitative imbalances imply a "mismatch" of the contents or structures of qualifications and of jobs, which is normally not registered by official statistics. "Over-education" looks at qualifications as the point of reference whereas "under-utilisation" refers to the job. Both terms can be summarised by "inappropriateness" (of jobs or of skills).[78] We concentrate below on the question of "over-education", which appears to be the most prevalent in current labour markets.[79]

Measurement and reservations

In order to interpret research results properly it is important to know how "over-education" is measured empirically. There are, in principle, three approaches, with several variations (Hartog 1997):

- The *subjective approach* is based on the self-assessment of workers within an inquiry or a survey. Common questions are: "what education is required for your job?", or: "how much formal education is required to get a job like yours?", or: "what kind of education does a person need in order to perform your job?". The separate influence of qualifications and other individual characteristics is usually analysed using econometric analyses.
- The *objective approach* refers to job analyses specifying the required level and type of education and training (e.g. the U.S. "Dictionary of Occupational Titles" DOT), which are compared with the actual qualification of a worker.
- Another objective method is based on information on *realised matches*: the education and training required for a specific occupation is derived from the means or mode of the distribution of the qualificational levels of all workers in this occupation. A comparison of an individual's qualification with the mean value indicates the degree of over or under-education.

However, some reservations concerning these approaches should be made.

- They are mostly of a static character and do not take into account changes in job requirements (e.g. owing to new technologies) and in individual skills (e.g. through experience, continuing training) over time.

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77) This term was introduced mainly by Braverman (1974), Freeman (1976), Rumberger (1981).

78) Of course there are also inverse manifestations denoted as "under-education" respectively "over-utilisation".

79) This term also includes vocational training and higher education.

- It is not always clear whether a measured "over-education" could also be "under-utilisation": for example, out of two equally qualified persons in a similarly defined workplace, one may be appropriately employed in a modern, dynamic firm, the other one may feel "over-educated" in a traditional company.

- "Over-education" may also be a classification artefact: even in a 3 or 4-digit classification of occupations, the various jobs aggregated are often rather heterogeneous and require different skills, thus leading to a more or less broad distribution of required skills. This makes an "objective" measure problematic.

- The interpretation of over-education raises a dilemma concerning age and work experience. Young persons at the beginning of their occupational career are usually better educated than necessary for a specific job: their education and training should have prepared them for a variety of jobs and not for a specific one for which they may be "over-educated".
  Thus, transferable or versatile skills tend towards "over-education" for a specific job. Older workers with a long work experience may state that they cannot make much use of their initial education and training, achieved a long time ago; but maybe without that training they might never have reached the present position.

Results of empirical studies

The results presented below[80] make it difficult to gain a clear picture of the degree of "over or undereducation" in different countries and periods. There are substantial differences, not only from country to country, but, what counts more, also between different studies made for a single country. And there are considerable variations depending on the approach used.

- Common results for the *USA, NL, P and E* are 20-40% over-educated and 10-25% under-educated workers, with variations in time and country and in the measure of required education and training (Hartog 1997). The incidence of over or under-education is lower (about 10% each) when applying the "objective" method of standard deviation of the schooling distribution.

- For *The Netherlands*, studies by Hartog/Jonkers (1996) and Hartog/Oosterbeek (1988) based on "objective" comparisons of job titles and achieved qualifications show a strong increase in over-education and a decrease in under-education over the period 1960 to 1977: over-education increased from 7% to 26%, and under-education declined from 36% to 21%.
  Analyses based on self-assessment show similar developments for NL: Over-education increased from 17% to 24% and under-education dropped from 30% to 12% through the period 1974-1995 (Hartog 1997).
  Borghans/Smits (1997), based on self-assessments of new graduates from Higher Vocational Education in NL, found that in 1995 around 22% of graduates worked below "their" qualification, but also that 24% worked at a higher level "than the one they were trained for". However, another 20% had a job outside the occupational area they were trained for, 14% of which were working above and 46% below "their" qualification level.

- Studies carried out for *Spain*, based on self-assessment, indicate that in 1990 under-education was less common than over-education; the reverse situation was found in 1985. Over-education increased from almost 26% (1985) to 28% (1990), whereas under-education dropped from 16.5% to 11% (Beneito et al. 1997). However, an objective measurement, obtained by comparing standard deviations of qualification and requirements, shows a significantly lower degree of over-education (around 15%) and an equal degree of under-education.

- According to studies for the *United Kingdom* using different concepts (Sloane/Battu/Seaman 1997), the self-assessment approach results in 31% over-educated and 17% under-educated in 1986. An "objective" measure of comparing individuals' education with schooling distribution comes to a degree of over-education of 13% (male) and 10% (female) and of under-education of 10% respectively 8% in 1991.

- Analyses for *Portugal* and the period 1982/85 to 1991/92, based on job analyses, point to a growing mismatch situation. Over-education rose from 24-26% to more than 33% and un-

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80) The following presentation is largely based on Hartog (1997) and papers presented at the AEA conference (1997).

der-education fell from 43-48% to 38% (cit. by Hartog 1997).

- For the *USA*, several studies based on self-assessment (cit. by Hartog 1997) reveal that the incidence of over-education decreased in the eighties.

- In *France*, comparing the actual with the modal school level of a distribution associated with a certain job (objective method), the degree of over-education of younger workers strongly increased between 1986 and 1995 (Forgeot/Gautié 1997). The proportion of over-educated 18 to 29 years olds of all educational levels rose from 15% to almost 21%, without any significant correlation between the level of diploma and the degree of overeducation *(table 2-14)*.

Table 2-14: Over-education among 18 to 29 years olds by level of training 1986, 1995; France (%)

level of training	1986	1995
3eme cycle, Grande Ecole	18.8	30.1
2eme cycle	6.6	18.7
superieur court	31.5	39.5
bac. General et brevet de technicien	15.5	24.0
bac. Technique et professionnel	9.4	17.8
CAP, BEP	29.3	26.5
total population	15.2	20.8

Source: Forgeot/Gautié 1997

It is interesting to note that tenure reduces the degree of over-education significantly *(table 2-15)*.

- Several studies have been made for *Germany* in recent years.
  - An analysis based on self-assessment (Büchel/Weisshuhn 1996) results in around 20% over-education in 1993, which has remained stable over the past decade. Workers who have completed vocational training are significantly more affected by over-education (18%) and their loss of qualification is much higher than for university graduates (14%) *(table 2-16)*.
  - A multivariate analysis shows that the probability of being over-educated increases for persons with a vocational qualification, with age, employment in the private sector or for the self-employed, for foreigners and part-time workers. Moreover, overeducation goes hand-in-hand with massive earnings losses.
  - An objective approach analysing occupations, occupational status and qualification distributions by Plicht/Schober/Schreyer (1994) confirms these results on the whole for university graduates.
  - Pfeiffer/Blechinger (1995), based on self-assessment data, state that the appropriate utilisation of skills for people with initial vocational training decreased between 1979 and 1992, with an acceleration in recent years. They assume that the reasons are occupation-specific training in the dual system, which

Table 2-15: Over- and under-education of 18 to 29 years olds[1] by tenure and level of training 1995, France (%)

	tenure							
	less than 2 years		3 to 5 years		5 years and more		total	
	CAP, BEP	Bac and higher	CAP, BEP	Bac and higher	CAP, BEP	Bac and higher	CAP, BEP	Bac and higher
overeducated	37.3	35.9	29.1	27.3	24.8	21.9	26.5	27.9
normal	57.8	58.9	64.5	66.2	65.4	71.1	64.7	65.8
undereducated	4.9	5.2	6.5	6.5	9.8	7.0	8.8	6.3
total	100	100	100	100	100	100	100	100

1) without people in job creation schemes
Source: Forgeot/Gautié 1997

Table 2-16: Adequacy of employment by level of qualification 1993, West-Germany (%)

	level of qualification								
	completed vocational training			with university training			all qualifications		
	male	female	total	male	female	total	male	female	total
adequately employed	86.2	76.4	82.1	90.9	74.4	86.2	87.2	76.1	82.8
not adequately empl., type A [1]	6.3	6.8	6.5	5.7	13.3	7.9	6.2	7.6	6.8
not adequately empl., type B [2]	7.4	16.9	11.4	3.4	12.3	5.9	6.6	16.3	10.4
total	100	100	100	100	100	100	100	100	100

1) type A minor to medium loss of qualification; 2) type B: high loss of qualification
Source: Büchel/Weisshuhn 1996 (based on the Socio-economic Panel)

loses its value by virtue of rapid job and technological change. The share of apprenticeship-trained people who could use "very much" or "rather much" of their training, decreased from almost 66% in 1979 to 58% in 1992. The proportion of those who could use their training "little" or "very little" increased from 21% to 24%.

❑ Comparative *EU figures* of over or under-education can be derived from the *Ad Hoc* Labour Market Survey 1994 (European Commission 1995c). It is restricted to the industrial and retail-trade sectors and based on a comparison of the qualifications of workers and between the type of jobs within enterprises (comparison of distributions). Comparison of aggregate qualification levels, however, does not allow us to establish over- or under-education, in the narrow sense. But it gives a first indication of differences between the distribution of workers' qualifications and the quality of jobs within firms.[81]

In all EU Member States there is a remarkable congruence between qualifications and job status. 72% of all workers had a vocational qualification, and 67% of all workers performed a skilled job *(table 2-17)*. There are no significant discrepancies between younger and older workers, except for those 49 years and over, where even under-education occurs.

But there are substantial differences between the Member States, as *figure 2-16* illustrates. In most European countries the proportion of qualified workers is somewhat higher than the proportion of skilled jobs. It is difficult to find any indication of a general over or under-skilling, however, although the discrepancies for women are greater than for men. There are even some countries where undereducation seems to prevail: this is the case in F, P, IRL, UK and EL.

4.4 Conclusions

The seemingly paradoxical situation that both employment and unemployment are on the increase in many EU Member States can be attributed, amongst

Table 2-17: Comparison of qualification and jobs 1994, EU[1] (%)

	voc. qualif.	skilled jobs	no voc. qualif.	unskilled jobs
male	72	71	23	20
female	67	60	31	30
male and female	72	67	26	24
up to 29 years olds	67	61	31	29
30-49 years olds	75	70	23	22
49+ years olds	67	68	30	25

1) B, DK, D, EL, E, F, IRL, I, NL, P, UK: industry and retail trade
Source: Hoffmann 1995

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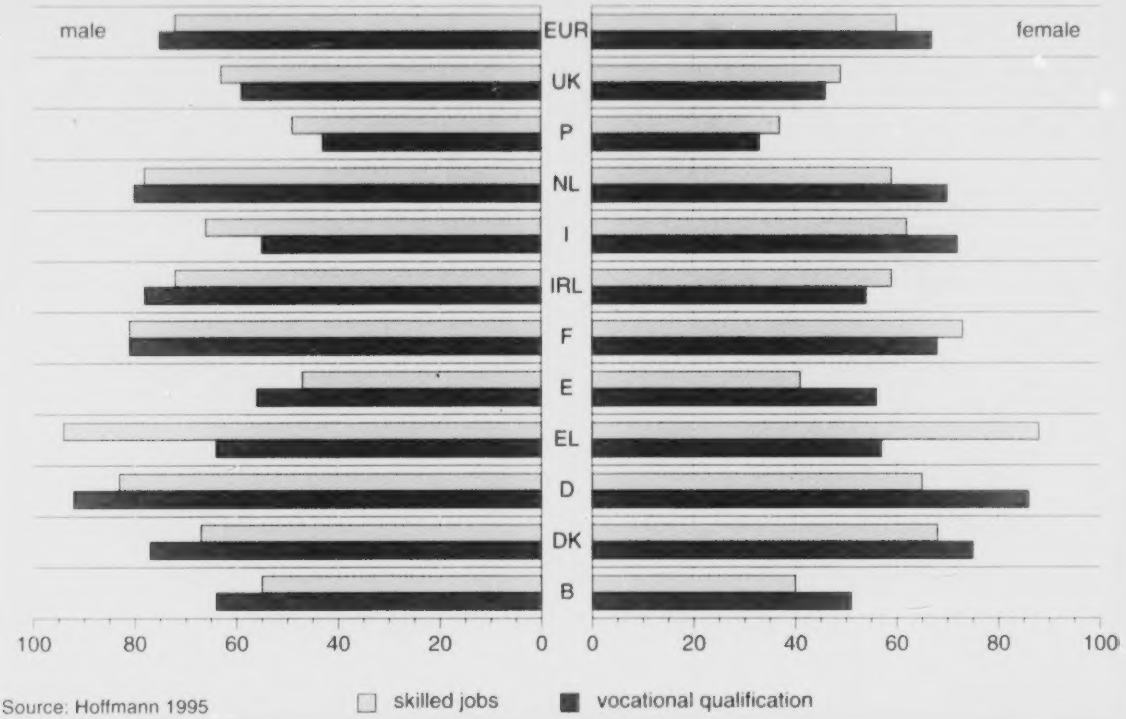
[81] Since an individual balance was not made, the figures only indicate the net balance between over and undereducation.

Figure 2-16: Congruence of qualifications and jobs by gender, EU 1994 (%)



Source: Hoffmann 1995

other things, to two causes: on the one hand to the greater increase in the labour force potential than in the number of jobs and, on the other, to an increasing mismatch between qualification requirements and jobs. The second reason is one of the main reasons why long term unemployment and very long-term unemployment are constantly rising.

Unemployment leads to inequalities, psycho-social problems and high social costs which impede investment in innovative and future-oriented areas as well as in training and labour-market programmes. Thus, they have an in-built tendency of self-reinforcement. It is mainly economic and labour-market policies which must create new jobs or redistribute existing work.

But VET policy, too, is especially called on to dismantle the structural components of unemployment. There is general agreement that structural unemployment, besides regional and sectoral imbalances, can be attributed above all to a mismatch of qualification profiles of jobs and workers: job losses and unemployment rates are above average for the unskilled but unemployment and over-education tend to be higher for people with intermediate qualifications, too.

Education policy can help:

- To adapt the qualifications of the unemployed and people threatened by unemployment to the needs of the world of work by means of further training and retraining. What is needed is concrete information on the qualification requirements of companies, which could be regularly collected with the help of enquiries and analyses of job offers and their requirements by means of cooperation involving all those concerned, the social partners, too.

- Follow-up measures in labour-market policy (e.g. wage subsidies, induction allowances, etc.) could facilitate the integration of the long-term unemployed into working life, particularly their access to the internal labour markets of companies. On balance, these measures are not or only slightly more expensive than the costs of unemployment if all costs (and revenue loss in terms of taxes and social contributions) are included.

- An anticipatory education and training strategy should aim to give young people the qualifications which open several options for various occupational paths and the ability to successfully cope with different working situations. Here, too, more detailed analyses are required as to which qualifications, skills and competences are required and the extent to which they are recognised on the labour market.

- In this context, terms such as "employability" and "transferability" should be re-assessed. They are self-excluding when there is a higher degree of "employability" as a consequence of workplace-oriented training. In these cases, the qualifications are scarcely transferable. The same applies in the reverse situation. There is greater congruency between both when companies place increasingly value on transferable skills, for instance, in connection with new production concepts and flexible work organisation. These trends were already indicated in chapter 2.

Considerably more research is required in these areas. This means less macro-analyses with highly aggregated data and more specific company and workplace analyses in the core and key industries of the economy and public sector. However, analyses of this kind are as a rule expensive and take considerable time.

5 The changing nature of work and skills[82]

A discussion of future trends in work and skills cannot be limited to quantitative forecasts, but also has to take account of the changing nature of and the values assigned to work and skills. Both are influenced by individual behaviour and the changes in the socio-economic framework.

Concerning the discussion about whether new jobs and appropriate policies could open the way to substantially reduce unemployment, it is obvious that there is neither an *automatic* relationship between economic growth and employment growth nor between job increases and a reduction in unemployment, although in some countries and periods these linkages have been observed empirically. Furthermore it cannot be expected that - in the short or medium-term - economic and employment growth could be stimulated solely by investments in education and training. But it also becomes clear that *without* complementary measures to enhance skills, in the longer term economic and employment growth will be hampered by the inappropriate quality of the workforce.

5.1 Individualisation and subjectivity

In contrast to the great utopias of work and society in the past, and to attempts to find laws and regular patterns in the change of socio-economic structures and the nature of work, the current process is a dynamism of increasing openness, uncertainty, complexity and acceleration, with multiple and interlocked problems facing advanced industrial societies. This applies to society as a whole as well as to individuals and enterprises.

There seem to be strong tendencies that erode the traditional cultural patterns of an individual's lifestyle as well as the value assigned to work.[83] Predictions that (paid) work would be of diminishing importance in individual orientations apparently proved not to be true, however. People's real living conditions, their hopes and fears, indicate that socially validated work which shapes the individual's identity and sense of self-worth (Marcuse 1965) has not been subject to decisive depreciation over recent decades.

> What seems to be changing, however, is the traditional values the skilled worker assigns to work, his patterns of motivation and his life orientations. Caused by the erosion of homogeneity and coherence in his traditional milieu on the one hand, and encouraged by increasing salaries and wealth, social security and opportunities for education and training on the other, his expectations of work have become different. They are much more focused on the conditions, recognition and gratification of his work, on self-determination and towards work in demanding, future-oriented jobs.

This change described by Lutz/Voss (1993) as the "dissemination of middle-class ideals of life in the working classes" results in a more conscious and rational planning of individual life and career and, consequently, in a choice of those education and training courses which promise best to achieve these goals.

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[82] *This chapter is partly based on the contribution of M. Tessaring (1997): The future of work and skills.*

[83] Cf. the profound analysis of the changing nature of work in the history of our societies by Arendt (1958).

From the individual point of view, the ageing of our societies and the decreasing number of young talents may also have positive aspects. They may bring about a greater economic self-determination and independence among older workers, with regard to wealth, properties, insurance and inheritance. This could foster an attitude where the attractiveness of work becomes an economic calculus.

It is assumed that these processes of individualisation go hand in hand with changing structures of the post-industrial society, with the spread of new technologies and new forms of work organisation and labour division both within and between enterprises.

In so far as "individualisation" is defined as an increasing singularisation of individual subjects and their biographies, however, some critics state that individualisation is not necessarily connected with subjectivity. Case studies for four countries show that - for technical workers and in view of the competition with elite groups - attempts to secure a certain status, the putting through of defined and standardised entry wages and careers and the rejection of individualised recruitment practices in the phase of job entry, demonstrate a collective consciousness in order to introduce and stabilise a new category of workers (Drexel 1994).

5.2 The emergence of new jobs

Skill needs in "information and knowledge-based societies"

Work processes are not only a "metabolic process" with Nature but they also produce knowledge. There seems to be a growing separation of performing work and information-processing work, a separation of manual work and brain work. "Information" according to Foray/Cowan (1997) requires codification, e.g. the conversion of knowledge into messages, which can be then processed as information. Thus, information and knowledge are two sides of the same coin and give rise to one another.

These processes are decisively supported by ICTs which facilitate the development of networking and the integration of different information systems. Thus, in the information society both processes merge: the computerisation and "informatisation" of work on the one hand, and, on the other hand, the emergence of systemic production methods based on new technologies which are at the same time the basis of a new social formation and a new shaping of work.

These processes lead, according to Boes et al. (1995), to basic shifts in the trends of individual work:

- information work is and will increasingly be of importance both to suppliers and users of information, and in all spheres of society;
- work becomes increasingly reflexive. Information on the one hand enables to observe and improve work in relation to its aims, quality and efficiency; and on the other hand to relate individual contributions to those of others[84]. This requires a new specific - not necessarily occupational - identity;
- specific competencies and occupational sections will be under increasing pressure to adapt.

There are promising opportunities to enhance skills and work in the context of modern production and work organisation. They require holistic qualifications and skills and a combination of specialised abilities, methodological and social skills and thus tend to overcome the traditional occupational demarcations - unless these occupations are not adapted appropriately. These new conditions of production and work organisation may increase the upgrading of work by increasing workers' autonomy and expertise.

The same process, however, may lead to a depreciation of the *traditional* skilled worker on the intermediate level, since it requires both practical experience with machines and material, and theoretical knowledge of the principles of the production process ("production intelligence").

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[84] Since this would not exclude a self-rationalisation, evasive strategies to modify information according to individual or group interests could occur.

ICTs and employment growth: empirical results

- Freeman/Soete (1991) presented scenarios for the impacts of ICT in D, F, I, and the UK, supplemented by additional estimates for other countries. The scenarios are based on the econometric model "HERMES", treating ICTs as a separate sector.

  In their reference scenario of moderate ICT diffusion the authors predict for the year 2005 a slightly decelerating growth in GDP below the 3% threshold, and thus pressure on the labour market. Labour demand should increase by only close to 1% per annum, and unemployment should not fall since the labour supply should grow *(table 2-18)*. An accelerated scenario of rapid ICT diffusion even results in a fall in employment because of an accelerated rise in productivity.

- A study of the METIER Consortium (1995) for EUR 12, using econometric models, compares the impacts of an accelerated diffusion of ICTs with that of slow diffusion up to the year 2010.

Table 2-18: Impacts of ICTs on economy and employment 1991-2005 (%)¹ - reference scenario -

		1991-1995	1996-2000	2000-2005
D	GDP	3.5	3.2	2.9
	productivity	2.7	1.7	2.1
	employment	1.5	1.6	0.9
F	GDP	2.7	2.9	2.8
	productivity	2.1	1.8	1.7
	employment	0.5	1.1	1.0
I	GDP	3.3	3.0	2.8
	productivity	2.5	1.9	1.8
	employment	0.7	1.0	0.9
UK	GDP	2.2	2.9	2.9
	productivity	1.3	1.7	1.3
	employment	0.4	0.9	1.3
EU	GDP	3.0	3.0	2.9
	productivity	2.1	1.8	1.8
	employment	0.9	1.1	1.0

1) annual growth rates over 5 year periods
Source: Freeman/Soete 1991

Table 2-19: Scenarios for growth and employment in EUR 12 up to 2010

	1992	accelerated ICT diffusion¹	slow ICT diffusion
GDP growth p.a. (%)	-	2.6	2.4
labour force (mio)	154	180	180
employment (mio)	139	166	160
unemployment (mio)	15	14.4	20.1

1) advanced communications, incl. traditional telecom-services and new networks and services
Source: METIER consortium 1995

  The accelerated scenario results in an increase of 6 million jobs throughout the 12 EU countries, and in a slightly reduced unemployment compared with 1992 *(table 2-19)*. Unemployment would rise significantly in the case of a slow ICT diffusion. The authors point out, however, that an estimate of such employment balances is connected with considerable imponderabilities.[85]

- Prognos/DIW (1996), based on trend-scenarios, expect for the year 2010 around 180 000 new jobs in the media and communications sectors in Germany; however, a total employment balance, including job variations in other sectors, was not made.

- Little (1996) distinguishes between suppliers and users of information. Based on trend scenarios and expert ratings he expects for the period 1995 to 2010 in Germany 153 000 new jobs in supply sectors and 57 000 in user sectors, which are induced by "TIME sectors".[86] This job growth, however, could only partly compensate for the job losses in user sectors *(table 2-20)*.

  In addition, TIME sectors also retain employment which would otherwise have been reduced. Little estimates that in Germany about 1.2 million jobs are secured by TIME activities.

- In a projection for Europe, Little (1996) expects that a strict liberalisation of the information sectors would create between 3 and 6 million new

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[85] Thus for example, labour supply in the EU was held to be constant.

[86] TIME = telecommunication, information technology, media, electronics.

Table 2-20: Employment effects of TIME technologies, D 1995-2010

	total employment effects		
	1995-2000	2000-2010	1995-2010
1. TIME offering sectors	24	129	153
2. TIME user sectors:			
- without TIME-effects	-746	-221	-967
- TIME-effects	-14	71	57
TIME user sectors total	-760	-150	-910
total employment (1+2)	-736	-21	-757
of which: TIME-effects	10	200	210

TIME: telecom, information technologies, media, electronics
Source: Little 1996

Table 2-21: Employment effects of the liberalisation of telecommunications in Europe 15 up to 2005, according to extreme scenarios[1] (1000 jobs)

job creation or generation	gradual liberalisation/ slow technological diffusion	rapid liberalisation/ rapid technological diffusion
direct job creation in telecom	-216	93
job generation by indirect effects	329	539
jobs generated by global economic improvement and business climate	115	668
global impact for Europe	228	1300
addition of national impacts EUR15	93	625

1) compared to a scenario of non-liberalisation
Source: BIPE 1996

jobs. A total employment balance however was not presented. A further 6 to 8 million jobs would be subject to changes in their contents and requirements.

- One of the most detailed European studies on the impacts of ICTs has been made by European research institutes under the co-ordination of BIPE (1996). The country studies and the European study analysed the effects of a liberalisation of Europe's telecom market up to the year 2005. The scenarios are based on econometric studies for all 15 Member States and provide quantitative and qualitative forecasts of employment change.

  Four scenarios have been modelled concerning rapid/slow diffusion of technologies, each combined with rapid/slow liberalisation of the telecom sector.

  The results confirm firstly the employment effects on the telecom sector itself, and secondly the macro-economic effects for each country and for the EU community as a whole:[87]

  a) Throughout Europe the liberalisation of telecommunications will result in a substantial reduction in traditional operators, according to all scenarios. These job losses could however be partly offset by an increase in jobs for other telecom staff. However, only in the most "optimistic" scenario is a net increase in telecom jobs expected.

  b) The macro-economic effects are either indirect or direct. Taking both effects together, the change in employment appears to be more or less positive in all scenarios."[88]

> **The results for the whole of Europe measure a wide spectrum of overall employment effects, ranging from 228 000 to 1.3 million new jobs in the most "pessimistic" and the most "optimistic" scenarios *(table 2-21)*.**

- Employment aspects in the context of ICTs were also addressed in a workshop on "The economics of the information society", organised in 1995 by the OECD in association with the European Commission (Dumort/ Dryden 1997). Although the positive aspects of ICTs, as regards work and skills, have been stressed, there was substantial doubt about the short and medium-term effects on employment growth.

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[87] For detailed country results cf. BIPE (1996)

[88] Note that for the EU Community as a whole the employment effects are greater than the addition of effects for all single countries.

It was pointed out[89] that a substantial time is required before the potential productivity benefits of ICTs are realised (Creti). Equally, Dumort/Riché-Magnier address the uncertainty of the impacts of information infrastructures on employment, but expect that they could lead to job creation in the longer term. But there is no guarantee that the benefits of telecom liberalisation and increased competitiveness will compensate for the negative direct impacts of rationalisation and of labour productivity. This will be achieved mainly through the substitution of labour by capital in the former telecom-monopolies.

Ferné, on the basis of an extensive OECD enterprise survey, states that productivity gains achieved in the information-intensive sectors made it possible to retain the workforce only at the cost of massive training and re-training efforts. As regards the effects on employment, technological solutions made it easier to reduce staff, though new jobs have been generated in some cases by out-sourcing. Although the economic recession is considered to be the major factor in job losses, ICTs have made it possible *not* to create more jobs when expansion resumed. This is also confirmed for Japan (Imamura).

Courtney illustrates the effects of ICTs and business process re-engineering (BPR) in the UK banking sector: the restructuring of employment led to a drop in permanent staff (9% for male full-time workers between 1986 and 1993), a significant increase in part-time work and the introduction of flexible contracts.

Richardson examines the effects of locational flexibility of service firms: the use of ICTs has enabled firms to separate service production from consumption by relocation to low-wage regions and then by exporting their services to more wealthy regions, thus creating employment and investment opportunities in peripheral regions with high unemployment.[90]

Minges/Kelly refer to the significant job losses experienced in the capital-intensive information and communication firms world-wide where employment has declined by 2.2% since 1992/93. Although new operators and services provide employment, the authors point out that this does not offset the large cuts made by previously state-protected telecom organisations. They admit, however, the difficulties of measuring the precise economic effects of the information sector.

The objective of job creation, as Hulten points out, may be frustrated by the fact that the adoption of IC technologies may only increase the productivity and employment of high-wage, high-skill workers and render the low-wage, low-skill workers increasingly redundant.

Changing nature of jobs and contracts

The transition from Taylorism to the 'post-industrial society' imposes contradictory elements. On the one hand, the promise of new holistic and self-reliant work, on the other - and in particular in the period of transition - unemployment, displacement, under-utilisation of skills and changing types of jobs.

The new forms of jobs and work contracts emerging in industrialised countries indicate that the "normal" standard employment contracts and occupational careers face erosion. Whether these new types of 'flexible' jobs which reflect the complexity and uncertainty - but also the dynamics - of our economies and social environment are desirable or not, and for whom[91], cannot be generalised. Most of these new forms of work are located in a continuum between regular and irregular contracts and, depending on the individual situation, may have advantages and disadvantages at the same time. Much more detailed analyses are necessary in this field.

A flexibilisation of work and work contracting is likely to bring about both cost and efficiency gains for employers, and the choice of different life-styles for employees. To achieve continuous improvement in work performance, it is widely agreed that employees need to acquire progressive and flexible skills (communication, judgement, decisiveness, initiative and self-management) that can improve their

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89) The following citations refer to their papers presented in Dumort/Dryden (1997). Some highlights have also been presented in chapter 2.1

90) These are not only regions in Europe, however.

91) It should be remembered that individual desirability or advantage does not always correspond to social desirability.

competencies outside their current organisation, too. With the employer-employee relationship becoming more flexible, however, job security is diminishing. There is a clear downside risk that the traditional tenure-based sources of skill may be weakening.

As a consequence, flexible rather than bureaucratic careers are expected to become more prevalent. Flexible careers involve frequent job changes. "For the workers involved, the aim is to gain incremental progression with each move … An inevitable feature … is that they are inherently insecure. It is no longer a question of gaining access to a superior job, but of maintaining one's 'employability', of keeping fit in both the internal and external labour market for jobs through the acquisition of externally validated credentials." (Brown 1995, p. 36) Brown also predicts that this "will place an even greater emphasis on access to initial 'fast-track' training programmes in order to climb truncated corporate career ladders and to obtain a 'value added' curriculum vitae." (p. 37)

This implies the danger of the social exclusion of workers. Policy is asked to improve the integration of those people in our society who are disadvantaged by nature or by the process of transition. That includes the physically and mentally handicapped, and all those groups involuntarily being affected or threatened by unemployment and social exclusion (cf. Part Three).

Untypical jobs

"Untypical jobs" should not be equated with "precarious jobs" without further analysis. Untypical jobs could also indicate new and promising forms of employment, if they correspond to individual preferences and future-oriented work. Thus, important criteria for deciding whether a job is precarious or not, would be voluntariness, reversible options, threat of unemployment or inappropriate employment, exclusion from careers, promotion, further training, social security, etc.

Typology of new jobs and job contracts

- *Job contracts related to working time*: part-time work; reduction of daily, weekly, annual, lifetime working time; flexible working time; shift-working; job rotation and secondment; exemption from work for family, care, further training or labour-market reasons; sabbatical year; temporary work; fixed-term contracts; seasonal work; flexible retirement schemes.
- *Contracts related to the location of jobs*: teleworking; extra-company work; home-working; agency workers.
- *Jobs related to the work status*: "quasi self-employment"; contract for services or for work; work as family members; informal work; do-it-yourself work; honorary work; jobs not covered by social security; illegal (shadow or clandestine) work.
- *Multiple job holders*, 'moonlighting', sideline activities (e.g. counselling, official duties, boardroom duties).

In the following, some selected empirical findings on new or emerging types of work will be discussed briefly.

Fixed-term contracts or temporary jobs form a considerable proportion of total EU employment, in 1995 around 12% of jobs. A high proportion of jobs newly created in 1995 were temporary ones, and more than 50% of the unemployed who found a job were offered a fixed-term contract (European Commission 1996: Employment in Europe).

Furthermore, the Community Labour Force Survey 1994 (Eurostat 1995b) reveals that fixed-term contracts are much more frequent among less qualified workers (9.5%) and higher qualified workers (9%) than among those with an intermediate level of education and training (6%), and the proportion decreases as the age of workers increases. But the differences between countries are enormous. For workers with intermediate skill levels, the proportion of fixed-term contracts ranges from 1.5% (L) to 23% (E).

The *Ad Hoc* Labour Market Survey 1994 (European Commission 1995c) confirms these results on the whole, although the country-specific results differ somewhat from the Eurostat data presented above.[92]

Some results:

- females tend to be more likely employed on a fixed-term contract basis than males;
- the average duration of fixed-term contracts in the EU is 12 months;

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92) Due to the limitation of the Ad Hoc Survey on industry and retail trade (for details cf. European Commission 1995c). Note that the results of the Ad Hoc Survey do not distinguish between different levels of qualification.

- the survey also compares actual part-time and full-time work with the working time preferences of workers and the unemployed. On the whole, 34% of the unemployed would prefer part-time work, and 13% of full-time workers would change over to part-time work. On the other hand, however, 33% of part-time workers would like a full-time job, thus the net balance for employment redistribution remains open. *Table 2-22* breaks these results down by gender;
- unfortunately, there is no further information on different levels of qualification. One indication, however, is the possibility of job-sharing: Research studies made in firms show that 60% of all jobs could be shared; this also applies to highly qualified jobs and executive positions (Hoffmann 1995). Future research is necessary to shed light on these questions;
- *self-employment* in Europe has remained more or less constant over the past 20 years at around 15-16% (male: around 19%, female around 10%). Countries with an above average proportion >20% were EL, P, I, IRL and E, in particular because of the greater importance of agriculture in these countries. A number of countries regard self-employment as one means of reducing unemployment, and offer financial support and advice and training courses on becoming self-employed.

Quasi self-employment exists if the worker - although formally self-employed - is more or less de facto dependent on one enterprise (for economic, contractual and other reasons). An empirical survey for Germany analyses the scope of "quasi-self-employment" according to different criteria (e.g. personal dependency, integration into the organisation of the principal, entrepreneurial risk, compulsory insurance and social security contributions).

The results show that the quasi-self employment is located within a grey area which covers 3.2% of the total labour force. Within this grey area, 0.6% to 1.4% of the labour force - depending on the criteria used - can be unambiguously defined as "quasi self-employed" (Dietrich 1997).

5.3 Job creation and ways to full employment

The high and persistent unemployment in quantitative and qualitative terms and its social, economic and fiscal costs have long raised the question whether unemployment could be overcome by the emergence of new jobs and occupations, and which policies would stimulate growth and employment. These aspects mainly concern the demand side (investment, liberalisation) as well as the labour force supply, in particular by a redistribution of the volume of labour by working-time adjustments.

Table 2-22: Full and part time work preferences, EUR[1] 1994 (%)

present status	preferred working time full time	 part time	 not stated
		male	
full time	88	10	3
part time	62	30	8
unemployed	77	17	5
		female	
full time	78	19	3
part time	26	67	7
unemployed	56	40	4

1) EUR 12 without Luxembourg
Source: Hoffmann 1995

However, the creation of new employment opportunities could partly be compensated for by an increasing labour force potential and would thus not reduce unemployment to the same extent. The linkages between "growth in GDP" -> "productivity" -> "employment" -> "reduction in unemployment" are controversial in research literature, although for Germany the link between growth and unemployment (*"Okun's law"*) appears to exist (Schalk/Lüschow/Untiedt 1997).

When discussing the aspects of "new jobs", it is important to distinguish between:

- the (quantitative) *growth in job numbers*; here particular attention should be paid to:
  - the (specific) creation of jobs in certain sectors or occupations, on the one hand, and
  - on the other, the net increase in employment in the whole economy, i.e. by balancing out job increases and losses in different economic segments.
- the (qualitative) *change of job contents* with the emergence of changing or new forms of jobs

and occupations with related implications for skill requirements and qualifications. This aspect has to be seen independently of the quantitative development since qualitative changes may also occur in shrinking job areas.

Of course, both quantitative and qualitative aspects have to be seen in the context of socio-economic change and cannot be separated from one another. The main aspects of socio-economic change were discussed above in the context of the post-industrial and information society, new technologies and work organisation and the ageing of populations.

These aspects will form the background for the following discussion of research approaches and results concerning new jobs.

New areas of employment

Ten years ago an expert group invited by the European Commission discussed the topic of new forms and areas of employment growth (BIPE/Nadel 1988) and many of their conclusions were confirmed and still appear valid today.

This refers in particular to the contribution of Lindley (1988), who analysed the aspects of the quantitative and qualitative emergence of new jobs and their implications for skill contents, changing forms of jobs and for policy. Analyses of quantitative and qualitative structural changes were presented for Spain, Italy, Greece, Ireland and the United Kingdom.

Lindley concluded, for example, that

- the growth of new forms and areas of employment will fail to compensate sufficiently for the loss of jobs elsewhere and for the growth of labour supply;
- the main areas of job growth are business and related services, tourism, leisure and health care;
- the occupations most likely to expand are the more highly qualified groups;
- multi-functional and flexible skills are increasingly required;
- new forms of work contracts and types will develop, but there is also the danger of over-qualification and social exclusion;
- changes in the location of enterprises, out-contracting and the role of SMEs would increase.

However, some current developments which have rapidly changed jobs and work in the past years were not so much in the foreground at that time. These are the spread of new technologies, and in particular the new key technology ICT, and the role of information, changes in the division and organisation of work, globalisation and international competition, spatial re-localisation of production and employment and ecology-related work and production.

Most of the attempts to estimate future quantitative developments in overall employment or in the structure of jobs are carried out in the framework of structural or econometric forecasts (cf. chapter 5.4). In addition, the European Commission (e.g. Employment in Europe 1996) has published comprehensive material on job creation in the past and possible outlooks.

> In summary, one can state that there is no one single way to increase employment and to reduce unemployment but a set of strategies and policies requiring a high degree of consensus between all actors.
>
> It should be pointed out that the creation of additional employment needs not necessarily reduce unemployment to the same extent. Success in reducing unemployment also depends, among other things, on the size and development of the labour force potential (including the 'hidden labour force') and will be limited if there are structural imbalances in the labour market, e.g. due to a mismatch of qualifications or to regional and sectoral disparities.

Ways to full employment: strategies and policies

In the past ten years several strategy papers and scenarios have proposed ways to create employment and reduce unemployment. Examples to be mentioned here are the early proposals of the "Kreisky Commission" 1987/88 (cit. in: Europäisches Gewerkschaftsinstitut 1990), the White Paper on Growth, Competitiveness and Employment by the European Commission (1993a), the OECD Jobs Studies (1994f, 1995h, 1996g, h) and various strategies proposed by research institutions, e.g. McKinsey Global Institute 1994, Bertelsmann-Foundation (cit. in Huckemann/ Suntum 1994) and IAB (1996).

It is mainly the improvement in economic parameters which is expected to be most efficient for investment growth and for employment gains (in particular in services): policies on working time, wages, taxes, interest rates, social insurance and regulations. Since those policies on increasing employment would not automatically reduce unemployment they must be backed by complementary allocative measures, concerning the integration of the unemployed and measures to promote the first employment of graduates as well as the re-entry of persons into working life.

- The White Paper of the European Commission (1993a) expressively sets out ways to create 15 million additional jobs in the EU by the end of this decade, thus halving unemployment in the Member States. Concerning complementing economic measures to increase growth and investment, priorities are set in the active re-integration of the unemployed through training measures, the further creation of part-time work and the improvement of occupational opportunities for women. As yet unexploited employment opportunities are, for example, neighbourly help (household aid, child caring, building security), extended job offers for leisure time and culture activities, urban renewal and a more efficient suburban traffic, and environmental protection.

- The OECD Jobs Studies on the whole agree with the analyses of problems and the policy recommendations of the White Paper, in particular concerning the re-integration of the unemployed, increased part-time work and improved educational and training systems through the encouragement of life-long learning. More pronounced than the White Paper, however, the OECD relies on market forces and warns against an overdrawn and badly constructed social security system which could undermine the inclination to adapt to structural change.

- As a result of a comparative study for six countries (Japan, USA, Germany, France, Italy and Spain) the McKinsey Global Institute (1994) holds that besides dysfunctions on the labour markets, restrictions on the markets for goods and services are mainly responsible for the insufficient creation of new jobs. According to this analysis, new jobs are only to be expected in the service sector. Unlike in the USA, in Europe market restrictions and regulations (e.g. concerning regulations of building construction, restrictive environment regulations, framework conditions for radio and television programs, etc.) could impede investments and job creation.

- A comparative analysis of 17 industrial countries carried out by the Bertelsmann-Foundation (cf. Huckemann/v. Suntum 1994) reveals that the countries with most success in job creation in the period 1980 to 1993 were those where the tariff partners agreed to moderate wage increases without major strikes and to accept flexible working conditions (in particular concerning part-time work). The study draws the conclusion that job creation is best achieved by a consequent strategy oriented towards the market and towards social and monetary stability. In addition, active labour-market policy within the limits set by financial constraints, however, and in particular retraining and job creation schemes are of substantial importance.

- The labour-force balance[93] for West Germany until 2005 (Klauder 1995) carried out by the Institut für Arbeitsmarkt- und Berufsforschung (IAB) shows that the level of employment will increase only slightly in the period 1996 to 2005. On the other hand, the potential labour force is expected to remain at a high level. Balancing both, it becomes obvious that without additional measures employment growth will not be sufficient to resolve the problems on the labour market.

  Econometric simulations of the IAB (IAB-VI/1-8000, 1996)[94] calculate measures aiming to reduce unemployment in West Germany by half in the period 1996-2000 and beyond. They come to the conclusion that only a set of strategies may be able to increase employment and also reduce unemployment substantially *(table 2-23).*[95] Employment gains could total almost 2 million jobs in the most optimistic scenario. Assuming that about 2/3 of these additional jobs

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93) Between jobs and labour force potential

94) The measures outlined in this paper are steadily adjusted to new developments, the paper of reference here is dated from April 1996

95) The different scenarios are based on proposals of the social partners. These scenarios are compared to a scenario which is expected if no political measures are taken. In view of the continuous rise in unemployment in Germany (January 1998: 4.5 million) and to the difficulties in reaching consensus between all actors, the German Government seems to have now abandoned the goal of halving unemployment by the year 2000/2001

Table 2-23: Measures to employment creation: IAB-scenarios for West Germany

Scenario	Description of measures	employment effect[1] (1000) 2000	employment effect[1] (1000) 2005
A4	salary increase equals inflation 1997-2001; reduction of overtime by 40%; abolition of property and trade tax; lowering of contribution to social insurance by 1%-point p.a. 1997-2000; increase of VAT to 16% in 1997 and 17% in 2000; cut of social insurance expenses and subventions	698	1182
G1	working time/week in 2000: 35 hours, in 2005: 34 hours (no wage adjustment); constant operating hours; reduction of overtime by 40%; lowering of domestic interest rates by 1%-point	1214	914
G2	as G1, additional assumptions: lowering of interest rates in USA by 1%-point; higher GDP-growth in EC by +1%; additional public investments by 10 billion DM	1698	1624
S2	salary increase equals inflation 1997-1999; reduction of overtime by 40%; additional increase of part time work by 5%-points; abolition of trade tax; additional increase of mineral oil tax in 1997 and again in 1999; reduction of social insurance expenses by 20 billion DM and of subventions by 20 billion DM from 1997 onwards	1985	1342

1) compared to a basic scenario (mainly without additional policy measures)
Source: IAB-VI/1-8000 (1996)

will be filled by the unemployed[96], the level of unemployment could then be reduced by around 1.3 million.

❏ In her analysis of employment and job creation, the European Commission (1996: Employment in Europe) identifies three sectors of low, medium and high job growth in the past. She expects that these sectors probably have potential for employment and job growth in the future, too. When attributing present skill structures to these sectors it becomes obvious that these sectors tend to have lower proportions of low skilled workers. However, the relationships concerning sectoral distribution are not very clear; therefore it seems necessary also to look deeper into occupations and work tasks, their changes and their skill requirements (cf. chapter 5.4).

Low growth or declining sectors are agriculture, manufacturing, mining and electricity/gas/water. These will become increasingly less important on the labour market. However, some of these sectors do not have an extremely high proportion of low-skilled workers (in particular energy sectors), as *table 2-24* shows.

Medium growth sectors are identified as construction, distribution, transport and communication, banking/insurance and public administration. However, some of them have been marked by slower expansion in recent years. And employment expansion in the public sector is likely to be limited by public budgets in most countries. The skill level is below average in the construction, trade and transport sectors, and above average in banking and public administration.

High growth sectors are exclusively found in the services areas, in particular in business related and personal services, health and recreational services, and in education and training. These (except hotels/restaurants) have at the same time an above average skill level. However, large parts of these services are influenced directly or indirectly by public budget constraints and by political decisions. Thus it appears rather difficult to make a forecast for all of these areas.

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96) According to past experience, two thirds of additional jobs created will be filled by the unemployed, and one third by the "hidden labour force" (i.e. persons, who are not registered unemployed but are willing to work if they are given the opportunity).

Table 2-24: Educational attainment[1] by sectors[2] and expected employment growth in the EU 1995 (%)

Expected growth	sector	upper sec. education (ISCED3)	third level (ISCED 5-7)	total
low growth sectors	agriculture	5	27	32
	mining, energy	21	50	71
	manufacturing	15	44	59
medium growth sectors	construction	10	46	57
	distribution	11	47	58
	transport, communication	12	49	60
	banking, insurance	25	56	81
	public administration	26	49	74
high growth sectors	hotels, restaurants	7	39	46
	education	63	23	86
	business related services	37	40	77
	health, social services	30	39	69
total		21	42	64

1) ISCED, 25-59 years old population; 2) NACE 1-digit
differences by rounding. Source: EU Commission: Employment in Europe 1996

It seems necessary to balance out positive and negative developments to be expected in each of these different sectors.

In conclusion, proposals on how to create full employment or at least to increase employment substantially show that there is no panacea or "king's way" to overcome unemployment. But they also show that the way to full employment is not a mere utopia. In the short and medium-term, economic measures to increase growth and investments seem to be most efficient, but should be complemented by labour-market and training measures in order to improve the allocation on the labour market and to avoid or reduce structural imbalances. In the long run, however, the rising qualification and skill structure of the labour force becomes a strategic policy to enhance economic growth and productivity.

Similarly, Berger (1996) states that future employment can only be secured by:

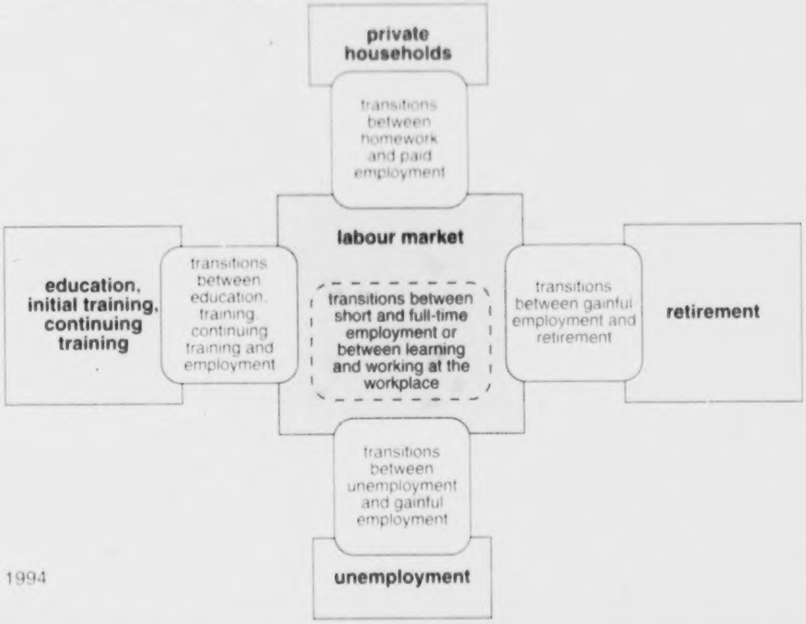
- innovation of products and performance in order to keep up with global competitors;
- process innovations in order to reduce unit costs and improve productivity;
- structural innovations which lead to above average growth of the high-technology and private service sectors, which are labour and value added intensive;
- these strategies should be complemented by measures in the field of innovation in education and training necessary to cope with future challenges.

For the time being, however, full employment is still a long way off. There are many proposals on how to ease the process of transition and to bridge the gap between insufficient employment opportunities and the high level of labour force potential.

One striking proposal by Schmid (1994) is the creation of transitional labour markets which combine regularly paid work with flexible transitions in different socially or individually useful activities, such as learning, educating, cultural and political participation, or social engagement *(figure 2-17)*.

To achieve this goal, the bridges to the regular labour market from those activities have to be rein-

Figure 2-17: Transitional labour markets


private households
transitions between homework and paid employment
labour market
education, initial training, continuing training
transitions between education, training, continuing training and employment
transitions between short and full-time employment or between learning and working at the workplace
transitions between gainful employment and retirement
retirement
transitions between unemployment and gainful employment
unemployment

Source: G. Schmid 1994

forced and permanently institutionalised. For individuals or firms, they should represent temporary options which could be used at certain stages of the biography or economic situations.

> Transitional labour markets may thus form an elastic buffer which can expand in times of recession and contract in boom situations. Those labour markets are not only a socially acceptable, but also an economic efficient alternative to a society, in which some people have too much work whereas others are unemployed.

"Best practices" are found, for example, in the Danish model of job rotation and in measures concerning the promotion of modernisation combined with the extension of firms' or extra-company further training institutions in Saarland. Others are the funding measures and mixed further training schemes in Denmark and The Netherlands (cf. Auer 1992; Auer/Schmid 1993; Höcker 1992).

5.4 Forecasting employment by sectors, occupations and qualifications

Preventive education and labour-market policy is dependent on some notion about the future, i. e. on possible future developments and structural changes in employment and qualification requirements. Forecasts of this kind may be of a quantitative-structural, or of a qualitative nature. The determination of future "innovative" qualification and skill contents, on the other hand, is an area covered by occupation-related pedagogic and curricular research. An alternative to quantitative forecasting are scenarios which are based on past trends and (more or less subjective) expert estimates concerning different socio-economic developments.

In the following chapters we will concentrate on scenarios and structural forecasts.

A scenario of future education and training

A scenario aims at describing possible or desirable future situations and the means or events which might lead to their realisation. Taking account of the uncertainties in all spheres of social and economic life, scenarios should increase the awareness of the complex relationships and may thus function as an early-warning signal. In shedding light on risks and chances, a scenario may also be useful for formulating strategies and identifying options (Schoemaker 1995).

Some recent scenarios to be mentioned here are:

- a "Delphi-enquiry" among European experts on policy needs for research, study and experimentation in European education and training, carried out by SCIENTER (1996) on behalf of the European Commission/DG XXII;

- an examination of economic, social and cultural trends in Europe, carried out by de Jouvenel (1996) on behalf of the European Commission/DG V;

- a Delphi-enquiry on the future of adult education in 14 European countries, carried out by Leirman (1996)

- a Delphi-enquiry among mostly national experts concerning long-term trends in education and training in Germany and their implications for policy is currently being conducted by Infratest on behalf of the German Federal Ministry for Education, Science, Research and Technology (1997/98).

Below, a scenario for future education and training in Europe, elaborated by Wieringen (1997) will be presented briefly.[97]

The scenario is based on a Delphi-enquiry addressed to around 100 experts and considering some 100 trends (e.g. flexibilisation, ageing, mobility, technology, employment structures, regional developments, etc.). The experts were asked for written statements on three "environments" relevant to education and training and considering the trends in the:

- economic and technological environment;
- employment environment;
- training and knowledge environment.

As a result of the expert rating, several common trends have been identified:

- increasing individual responsibility for training;
- growing importance of specialisation;
- continued importance of schools for lower social groups;
- a strengthening of the relation between education and other knowledge institutions;
- growing importance of tax reliefs for training.

The analysis of this first round in the enquiry aimed at providing an empirically reliable and theoretically founded reduction in the variety of trends considered. In a second round, some more specific trends - linked to several factors of influence - were presented to the experts once again. Their statements served as a basis for the construction of four scenarios. These were the result of a matrix combining the items "employability/life-cycle work" and "dependence of the economy on knowledge interaction structure" with each other.[98]

Based on these scenarios, a range of strategies was formulated which are supposed to have a high degree of certainty:

- increasing individual responsibility for training;
- increasing importance of training courses organised by industrial branches;
- growing division of responsibility: functionally oriented training for the industry;
- decreasing investment of industry in lower educated people.

Forecasting occupational and qualification structures

In Europe relatively few research institutes undertake quantitative forecasts of occupational and qualification structures. This may be attributable to the lack of suitable or available statistical data and, in addition, to a wide-spread scepticism concerning the reliability and the relevance of forecasts.

Although the scepticism concerning the importance of quantitative forecasting for policy-making is legitimate to a certain extent, a qualification must be made. The decisive question is how a forecast is constructed and for what purpose it is used. Forecasts may be useful for political reasons and decision making when, for instance alternative development lines and the effects of policy measures are to be evaluated. Forecasts may also function as a warning by outlining the direction a development might take if no countermeasures were adopted in time. In this case the forecaster might even be happy if his prediction was not fulfilled.

The European Commission (1994) expressively calls for forecasts for the national, regional, local and firm level: "Vocational training should be co-ordinated with the needs of enterprises and individuals. The question is raised, how these needs could be considered, how changes of demand could be identified and how foreseeable changes could be anticipated and on which level." (p. 36) Concerning demand forecasting, the Commission claims:

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[97] Cf. for an overview on scenarios made in NL: Wieringen 1997.

[98] Both items had the dimension "weak or strong".

- "as a tendency there are indications that improved demand forecasts are required;
- changes have to be anticipated better, concerning the national, regional, local and enterprise level;
- the European Community is asked to take initiatives in order to make the data collected available and comprehensible" (ibid.).

On the other hand, long-term aggregate forecasts may be also detrimental, particularly when they serve as a decision-making basis for young people's choice of training or occupation. This may lead to counteractive developments: the forecast destroys itself.

Methods and procedures

The forecasts presented below are based on the "Manpower Requirement Approach" (MRA) and the "Social Demand Approach" (SDA), which both have a long history and need not be described here in detail.[99]

The *Manpower Requirement Approach* calculates the future demand for manpower, i.e. the future number of jobs available, by different job characteristics (mainly by industrial sectors, occupations or work activities, levels and subjects of qualification).

The basis of the MRA is a macroeconomic or econometric forecast of future economic growth, productivity and other economic factors, from which future employment in the whole economy and by sectors is derived. In general, these macroeconomic forecasts include the estimation of a more or less large number of relations within the economy and their change due to expected developments of certain parameters. In most cases, alternative forecasts are being made in order to illustrate the scope of expected employment changes.

In further steps or modules, the macroeconomic and sectoral forecasts are broken down by job characteristics. Since the relationships between the numerous economic parameters and job characteristics are too complex and, in addition, require a huge quantity of empirical data not available in most countries, most forecasts of the job characteristics apply a *structural approach* in which employment figures by sectors are further broken down by occupations, qualifications and subjects. These specific structures are extrapolated by trend regressions.

Figure 2-18 illustrates the traditional procedure of manpower requirement forecasting.

The *replacement demand* is calculated by using flows of workers out of employment, (e.g. retirement, deaths, migration, etc.), usually differentiated by qualifications, occupations, age, sex, etc. It is assumed that the vacant jobs will be filled by persons with similar characteristics. Thus, the number of persons remaining in employment during the whole projection period represents the *residual stock*.

For estimating the *recruitment demand*, i.e. the number of jobs available for future graduates, and thus for estimating their employment prospects, the replacement demand and the net change in total demand are added up.

Supply projections normally use the *Social Demand Approach* and estimate the future flows of persons through education and training and their entry into the labour market. By adding up all new entrants during the projection period, the total *new supply* of persons (by qualification, etc.) is determined *(figure 2-19)*.

The new supply and residual stock add up to the total supply of manpower in the projection year.

Structural *labour-market balances* compare the total number of available jobs (MRA) with the total supply (SDA). Those balances, however, should be interpreted cautiously since they are calculated independently of one another, i.e. they neglect interactions between supply and demand. Furthermore, they neglect substitution and mobility processes on the labour market, which may lead to a balancing out of surpluses or shortages in specific job areas.

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[99] For a comprehensive review of the methods and applications of manpower forecasting approaches cf. for example: Weisshuhn (1977), Youdi/Hinchliffe (1985), v. Eijs (1993, 1994), Heijke (1994), and papers elaborated in the framework of CEDEFOP's network "CIRETOQ" (further information on request by CEDEFOP).

Figure 2-18: Procedure of the traditional manpower requirement approach

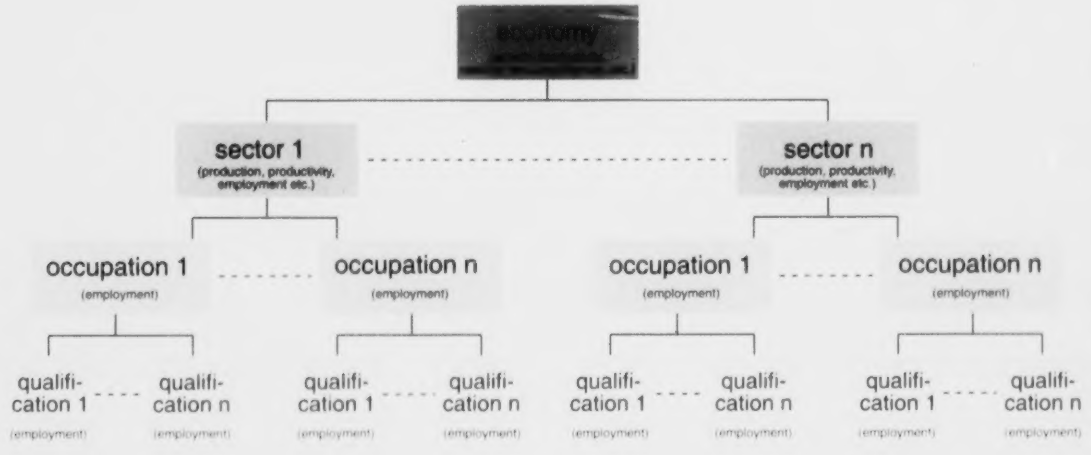
economy
sector 1
(production, productivity, employment etc.)
sector n
(production, productivity, employment etc.)
occupation 1
(employment)
occupation n
(employment)
occupation 1
(employment)
occupation n
(employment)
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Figure 2-19: Forecasting manpower supply and recruitment demand

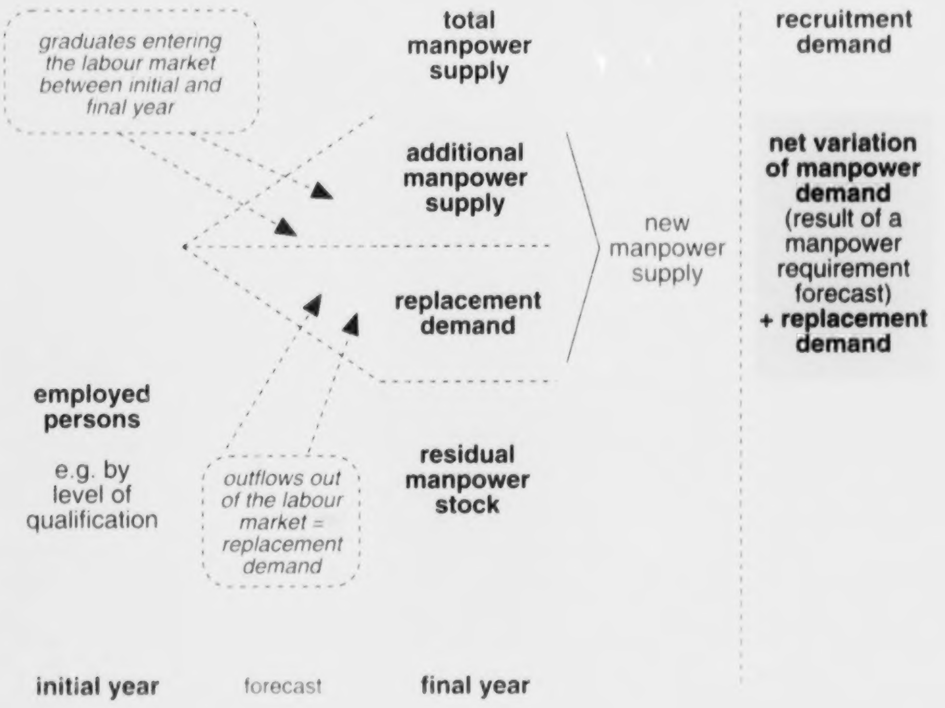
graduates entering the labour market between initial and final year
total manpower supply
recruitment demand
additional manpower supply
net variation of manpower demand (result of a manpower requirement forecast) + replacement demand
new manpower supply
replacement demand
employed persons
e.g. by level of qualification
outflows out of the labour market = replacement demand
residual manpower stock
initial year
forecast
final year

Table 2-25: Long-term employment change by industrial sectors. Forecast results for West-D, FIN, IRL, NL, UK (shares in total employment, in %)

country, year		agriculture, forestry, fishery	manufacture, energy, construction, transport	private or market services	public or non-commercial services	total
West-D	1976	6.3	45.2	25.7	22.8	100
	1991	3.3	39.3	38.1	19.3	100
	2000	2.5	36.4	40.0	21.1	100
	2010	2.0	33.6	41.6	22.8	100
FIN	1970	20.6	42.0	23.9	13.6	100
	1990	8.0	36.2	27.5	28.3	100
	2010	4.9	32.1	30.5	32.5	100
IRL	1981	16.6	32.1	33.2	18.1	100
	1991	13.7	28.4	37.7	20.2	100
	1998	10.0	28.3	41.2	20.5	100
NL	1993/94	4.3	27.7	39.6	28.4	100
	2000	3.4	27.0	41.5	28.1	100
UK	1954	9.1	34.5	41.0	15.4	100
	1994	2.6	18.5	54.2	24.7	100
	2001	2.3	16.6	57.4	23.6	100

Note: the figures are extracted from publications that did not always indicate detailed prescriptions of the sectors included. Therefore some of the results may not be fully comparable across countries. However, the focus of these results is on the intertemporal comparison of structural change

Sources: ROA 1995 (NL); Wilson/Webb 1995 (UK); Canny/Hughes/Sexton 1996 (IRL); Prognos 1993 (West-D); Poropudas 1994 (FINL)

Forecasting sectoral and occupational change

Concerning forecast results by *industrial sectors*, the forecasts more or less confirm the ongoing trends:

- towards an increase in the employment in the service sectors;
- towards stagnating or slightly rising proportions of employment shares in the manufacturing sectors and
- towards a continuing fall in employment (in absolute and relative terms) in the primary sector.

Thus they widely confirm the theory of Fourastié and the hypotheses of a post-industrial society discussed above. *Table 2-25* summarises sectoral forecast results for a number of European countries.

Available evidence on future demand trends for the *occupational structure of jobs* indicate a significant growth in professional and technical occupations and in administrative and managerial occupations. *Table 2-26* presents forecast results for some European countries as well as for Australia, the USA and Japan. The results show the relatively low growth in production service occupations and a significant decrease in agricultural occupations.[100]

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[100] The forecast for West Germany as done by the IAB, does not contain occupational items but is classified according to work characteristics ("Tatigkeiten"). The results for Germany therefore are illustrated separately. Similar for France, since the projection available is not classified according to ISCO classification.

Table 2-26: Employment change by occupations respectively work activities: Forecast results for some industrial countries (%)

occupation	Australia		Finland		Ireland		Japan		United Kingdom		USA	
	2001	**91-00***	**2010**	**90-10***	**1998**	**91-98***	**2000**	**91-00***	**2001**	**94-01***	**2005**	**92-05***
Professional and technical	20.9	1.6	31.5	9.4	17.8	1.6	14.8	3.8	20.3	1.7	19.3	2.1
Administrative and managerial	8.2	0.2			11.3	1.2	3.9	0.1	18.5	1.3	10.3	0.3
Clerical and related	16.5	-0.4	12.3	-0.4	14.2	0.3	19.5	1.0	14.6	-1.3	17.2	-1.2
Craft and skilled manual	16.0	0.4	19.9	-7.4	12.8	0.3	42.2	-2.1	12.5	-1.3	10.4	-0.8
Production, service, labourer	22.5	-1.8			15.1	-1.2			25.7s	1.7	29.6	0.2
Sales worker	13.6	0.7	31.5	1.3	18.6	1.4	14.8	0.2	7.4	-0.1	10.6	-0.1
Agriculture and related	2.4	-0.8	4.8	-2.9	10.2	-3.6	4.7	-2.5	1.0s	-2.0	2.5	-0.4
total	100	-	100	-	100	-	100	-	100	-	100	-

West-Germany: work activities	2010	93-10*
training, care, law, information	17.3	1.0
organisation, executive tasks	9.1	2.4
research, development, planning	5.1	0.0
general + personal services	11.0	-0.6
clerical and assistant work	16.8	-1.1
commerce, trade work	11.1	0.4
repairing, restoring	6.3	0.3
controlling, machine operating	10.7	3.1
manufacturing, processing	12.6	-5.3
total	100	-

France: occupations	2000	82-00*
self-employed	8.9	-1.0
senior and middle management	21.3	6.6
civil service	14.8	0.1
teaching	5.8	0.6
service employees and personnel	19.2	3.1
manual workers	25.5	-5.9
farmers, agricultural workers	4.6	-3.5
total	100	-

* change of percentage shares (in % points); s = estimated
Sources: AUS, JAP, USA: Jagger/Morris/Pearson 1996; UK: Wilson/Webb 1995; IRL: Hughes/Sexton 1995; FIN: Poropudas 1994; West-D: Tessaring 1994; F: Rajan 1989

Future employment and qualifications: forecast results

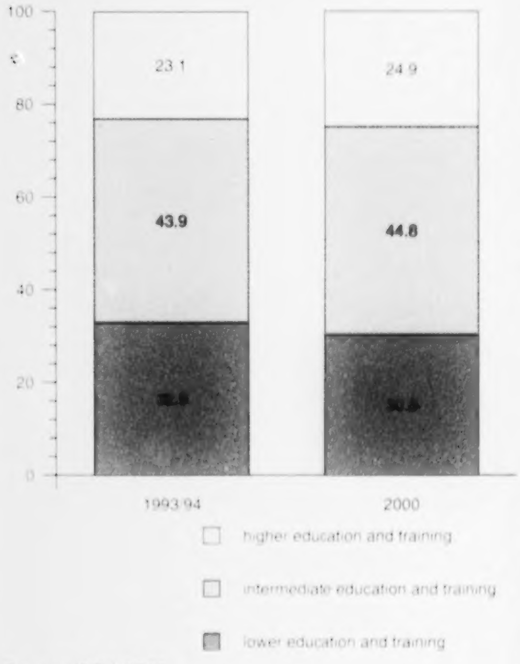
> The available forecasts confirm, in general, the rising skill requirements of jobs. This applies above all to most levels of higher education and to some groups of highly skilled manpower at the intermediate level. However, forecast results for the intermediate skills are not uniform in direction and scope. A general trend found in all countries concerns the dramatic decline in job opportunities for low-skilled and unskilled workers.

Since the education and training systems of these countries are rather different, the forecast results will be discussed separately. Most of these forecasts have also been compiled in the framework of CEDEFOPs network "CIRETOQ".

The Netherlands

Educational forecasts for The Netherlands carried out by ROA (1995) indicate that the highest growth rates are to be expected for persons with higher education and training levels, especially in medical, paramedical, technical, agricultural and economic disciplines. These include the levels of Higher Vocational

Figure 2-20: Manpower demand by qualification; NL 1993/94 - 2000 (%)



Source: ROA 1995

Education (HBO) and universities (UE/WO). Lower growth rates are calculated for Intermediate Vocational Education (MBO/LLW), except nursing and laboratory education, whereas the demand for all lower educational levels and those with only primary education will decrease substantially. The overall results are shown in *figure 2-20.*

The largest increase in demand and, depending on the type of training, the best career prospects are expected for higher education and higher vocational training levels. It is forecast that the demand and the job prospects for semi-skilled or unskilled workers will drop considerably. On the intermediate level, i.e. initial vocational training and apprenticeship, there is a slight but not above average increase. People with these qualifications, according to ROA, will increasingly be recruited for jobs which hitherto have been held by workers with a lower level of qualification.

Lower qualification levels are less in demand due to the fact that they are found in occupations that grow relatively slowly or that will contract. And employers will require higher qualification levels for their occupations. This upgrading process leads to a further decrease in demand for poorly skilled workers or those at the lower vocational levels.

The ROA (1995) draws the following conclusions:

> "The overall employment share of Intermediate Vocational Education and apprenticeship training is not expected to increase any further in the coming years, but there are large differences between the various types of education at this level. Positive effects on employment levels derive mainly from the progressive upgrading of skilled labouring work. A qualification at the Intermediate Vocational Education level is increasingly becoming the minimum requirement for skilled labourers." (p. VI)

United Kingdom

Projections for qualified manpower in the UK carried out by IER similarly show the high and above average increase in demand for highly qualified persons and the stagnating demand figures for unqualified workers, depending on the projection variant calculated.[101] Intermediate qualifications are expected to grow slightly slower.

Unskilled or low-skilled workers[102] which still represent around 4/5 of the total labour force, more or less stagnated in absolute job figures in the period 1981 to 1991. For the decade 1991-2001 a substantial decrease in demand, both in job figures and share in overall employment is projected *(figure 2-21).*

Balancing these results of demand against the projected supply of workers, IER draws the following conclusions:

Taking into account the limitations and sensitivities of forecasting results, "the main findings indicate that dynamic excess demand characterises most areas of occupational employment associated with higher level qualifications, i.e. supply has been grow-

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101) A "medium-term demand scenario" considers continuing trends of the proportions of qualified workers observed over the period 1981-1991. A "high demand scenario" assumes an accelerated increase of those trends, based on faster growth rates over the period 1991-1994.

102) These "unqualified" workers, according to the IER forecast, include: lower intermediate qualifications, trade apprenticeship, O'levels or equivalent, CSEs, YT and without qualification.

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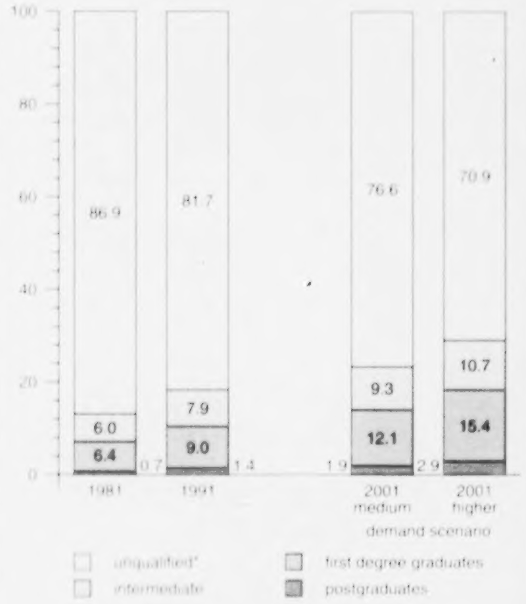
Figure 2-21: Manpower demand by qualification; UK 1981 - 2001 (%)



* "unqualified" include: lower intermediate qualifications, trade apprenticeship, 'O'levels or equivalent, CSEs, YT and without qualification. Source: Wilson 1995

ing rapidly but demand has been growing even faster. However, the significance of this varies greatly across the spectrum of different curricula." (Lindley 1994, p. 94). Compared to the 'medium term demand scenario' all supply scenarios, result in a substantial surplus of total supply over demand for 2001.

> The fact that considerably more graduates will be available on the labour market will probably lead to a displacement of lower qualified people by highly qualified in many areas. "Indeed, there is some evidence that when this happens, better qualified people may change the nature of the job being undertaken and so in a sense might create its own demand. It is clear, however, that *traditional* areas of graduate and higher level occupational employment are unlikely to be able to provide enough jobs to employ the large influx of newly qualifying entrants in the 1990s. The demand for graduates will need to rise in many occupations that have not in the past been regarded as requiring such qualifications." (Wilson 1995, p. 27)

The surplus of workers expected at the intermediate qualification levels will be even greater in the case of the semi-skilled or unskilled. This may be due to several reasons: crowding out of those on the intermediate level by people with a high level of qualification, a surplus of people with qualifications in the intermediate levels, with the consequence that workers with intermediate qualifications are being pushed into jobs with lower skill requirements.

Another study on future skill needs and supply published by the UK Department for Education and Employment (DfEE 1996/97) is mainly based on a forecast done by Business Strategies Ltd. (BSL) 1996. BSL "expects the trends that have occurred over the last couple of decades or so to continue over the period to 2006." (DfEE 1996/97, p. 36) In summary, DfEE draws the following conclusions:

"Medium and long-term shifts in industrial structure mean the occupational make-up of employment is likely to continue to change in favour of white collar, non-manual occupations, especially those which require higher level qualifications. In contrast, overall demand for blue collar, manual, occupations will decline.

But even in occupations which are in decline there is a clear need to train people to replace those lost to retirement and other occupations. Most importantly, even key intermediate-level occupations which are declining need a fresh supply of skilled labour.

The increase in the numbers of higher skilled jobs is only part of the challenge which lies ahead. It is becoming increasingly clear that the general skills content within most jobs is increasing. The greatest tests to the education and training system will occur where both numbers and skills are increasing." (p. 34)

Ireland

According to forecasts done by ESRI, trends in the sectoral and occupational structure of employment in Ireland are closely linked to a rise in skill requirements. A growing demand is expected for people with general and vocational secondary school-leaving certificates, and for people who have successfully completed university or non-university higher education. This will be offset by a drop in the need for workers on the intermediate qualification level and is more or less zero for people only having completed school education, or initial training.

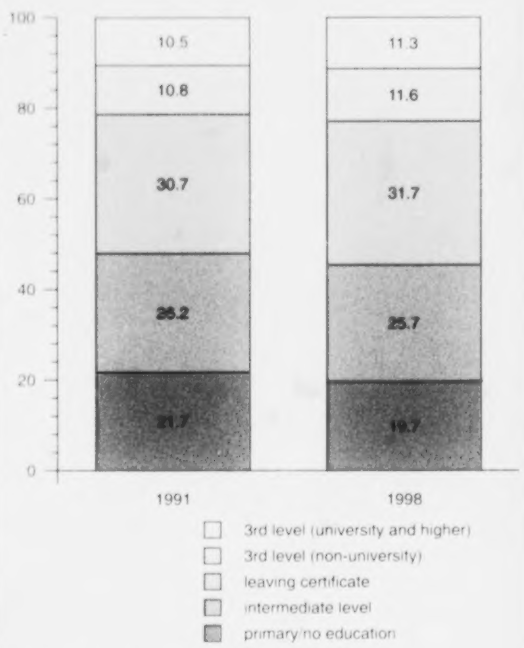
The results *(figure 2-22)* "show a strong trend towards higher educational requirements.... In practical terms this means that the great majority of new jobs will be filled with persons with a Leaving Certificate or third level education. Thus, nearly 40 per cent of all new jobs will require third level education at non-university diploma or university degree level. ... Non-university third level education will be far more important for new jobs than for existing jobs ... The increases in educational requirements for new jobs mean that there will be virtually no opportunities for persons with only a basic primary level of education to fill new jobs being created.... There should however be opportunities for employment of persons with Intermediate level as 21 per cent of new jobs will require this level of education." (Canny/Hughes 1995, p. 26)

> ESRI draws the following conclusion: "Although one cannot make a direct connection between educational qualifications and skills there is some evidence that the skill level of the labour force is rising.... The evidence for Ireland points to the growing importance of educational qualifications in a labour market which is becoming increasingly white collar. It suggests that there will be a need for a labour force in the future which is well educated and highly skilled. It will become increasingly important that poorly qualified workers presently in the workforce be given opportunities to attain further educational qualifications and/or training and it is vital that all school leavers should be encouraged to remain in school and attain qualifications which will equip them to take advantage of the new and expanding opportunities which are opening in the labour market." (Canny/Hughes 1996 (1995), p.27)

Germany

- Projections for Germany carried out by IAB and Prognos (Prognos et al. 1989; Tessaring 1991, 1994b) up to the year 2010 indicate a continuing growth in the service sectors and a corresponding decline in primary and secondary sectors. Similarly, service-related job activities - in particular "secondary service jobs"[103] in all economic sectors are expected to increase further. These shifts in the economic structure of employment are accompanied by rising qualification requirements in all job activities, resulting in a dramatic decline in the overall demand for unskilled workers and an above average rise in the demand for workers with higher qualifications.[104]

Figure 2-22: Manpower demand by qualification; IRL 1991 - 1998 (%)



Source: Canny/Hughes 1995

The demand for craftsmen with apprenticeship training is expected to rise on average, resulting in a roughly stagnating proportion of the overall labour force *(figure 2-23)*.

The projections also consider the *effects of technological and socio-economic influences* on work tasks and their implications for qualifications (Prognos et al. 1989, and an update published in 1996).

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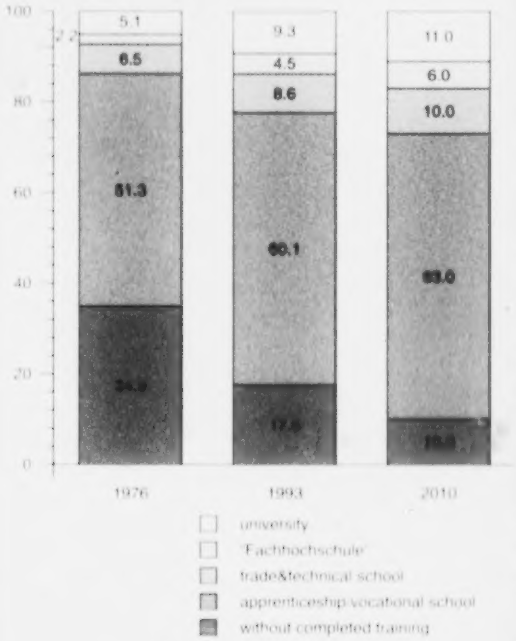
[103] These are mainly service jobs with a higher intensity of highly qualified manpower, e. g. R&D, management, executive tasks, computing, consulting, health and other care, teaching, informing, and the like

[104] It should be added that recent employment figures indicate an even faster than predicted growth in demand favouring workers with higher qualifications (Reinberg 1997).

Figure 2-23: Manpower demand by qualification; West-Germany 1976 - 2010 (%)



Source: Tessaring 1994 (medium variant)

The authors draw the conclusion that, also in the light of recent developments, the shift from unskilled to skilled job activities as a consequence of technological and socio-economic influences continues unchecked. Production-related jobs and some clerical and general service jobs will even retrench more than predicted in the late eighties. The shift from production-related to service-related jobs is expected to continue in the medium and long term. The intensity of this displacement effect should be even higher than in past years.

- A projection of the structure of manpower demand by sector, occupation and qualification carried out by Weisshuhn/Wahse/König (1994) covers the period 1990 to 2010. An adaptation scenario was calculated for East Germany.

The projection of the *sectoral* labour demand again finds that the tertiary sector will experience quantitative growth to the detriment of the primary and secondary sectors in West Germany. The structure described by the adaptation scenario for East Germany in 2010 is comparable to the western one. If the general trend of the projection does indeed prove accurate we can get a feeling for the enormous adaptation process the east will have to cope with in the years to come.

The forecast by *occupation* results in a similar scenario: a decline in the occupations in agriculture, production and manufacturing and expansion of service occupations, in particular personal, consumption and production related services.

A look at the *qualification structure* of the main sectors of the economy reveals several trends. The number and percentage of workers without vocational training is falling in all sectors. There is also a marked reduction in demand for unskilled workers in the tertiary sector, specifically in public services. The growing trend towards employment in the (private) tertiary sector also favours workers who have completed vocational training. Surprisingly, the secondary sector - the former stronghold of skilled workers - offers them only a minor job increase.

- The above-mentioned projections for the qualification demand[105)] were supplemented by specific manpower supply projections worked out by the State Federal Committee for Educational Planning and Research Promotion (BLK 1994).

The results indicate that the new supply of unskilled workers will exceed demand and thus will lead to a substantial deterioration in their employment opportunities. On the other hand, the future demand for craftsmen will exceed the future fresh supply and could thus cause shortages of this qualification level. For higher qualified persons (Fachhochschule, university), the new supply could exceed demand to a greater or lesser extent depending on the projection variant calculated.

However, BLK expects that qualified workers on the intermediate level will increasingly hold jobs which were previously filled by unskilled workers. On the other hand, university gradu-

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105) by Tessaring (1994b) and Weisshuhn et al. (1994)

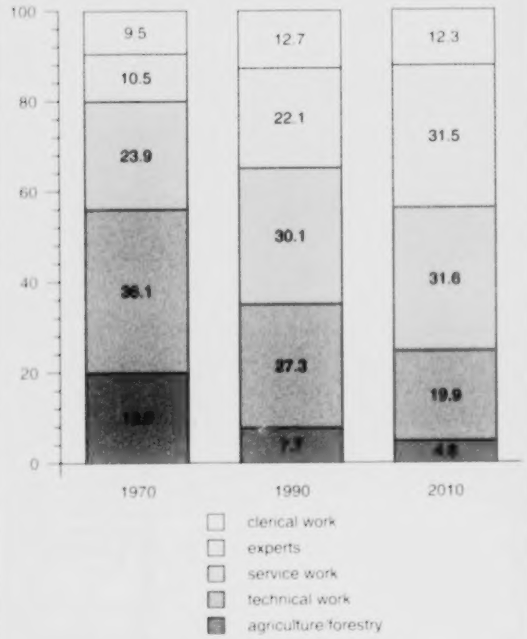
ates or, in particular, "Fachhochschul"-graduates will be entering some segments of the labour market which were previously occupied by people who have completed initial or further continuing training.

> All in all, due to the overall deficit of jobs in the German economy, future labour markets will probably be characterised by an ongoing selection of workers in favour of higher qualifications, where those with lower skills or with interrupted labour careers (e.g. the long-term unemployed) will have the poorest chances.

Finland

Occupational and qualification forecasts in Finland are carried out by the Finnish Council of Educational Planning since 1976. The recommendations of the Council, in particular those concerning the future job openings, serve as a basis for the planning and development of education and training and the funding of the different institutions. The results of a forecast of manpower demand by occupational group (Poropudas 1994) are shown in *figure 2-24*.

Figure 2-24: Manpower demand by ocupational groups; FIN 1970 - 2010 (%)



Source: Poropudas 1994

According to this projection, agricultural and technical occupations will be retrenched considerably. Service and clerical occupations will more or less stagnate whereas expert work is expected to increase its share within the whole labour force significantly.

A report compiled by the Finnish Labour administration (Työministeriö 1996) evaluates the short and long-term trends in the supply and demand of labour to the year 2010, with additional projections up to 2030. The report addresses several problems the Finnish economy is confronted with: the rise in unemployment in the early 1990s, the impacts of international upheavals and of European integration, the demographic development and the changing sectoral and occupational structure of employment.

> The report concludes that economic growth will be increasingly reliant on professionalism, specialised expertise and more efficient and less wasteful use of resources. This effectively marks a shift towards the information society, promoting greater productivity, efficient use of capital, sustainable use of natural resources and more labour-intensive production. (Työministeriö 1996, summary)

France

For France an earlier projection of total qualification requirements was available carried out by BIPE/Haute Comité d'Education Economie (1987, cit. in Rajan 1989) until the year 2000.[106] The results show a decrease in agricultural occupations and a significant increase in civil service, teaching, managerial and other service occupations. Another finding was that the educational level in all occupational groups will change in favour of high qualifications - irrespective of the growth or decline of this occupation. Qualification levels are also expected to increase for the self-employed *(figure 2-25)*.

This would mean that by the year 2000, 37% of the labour force will need higher educational levels, compared to 22% in 1982. Although the educational

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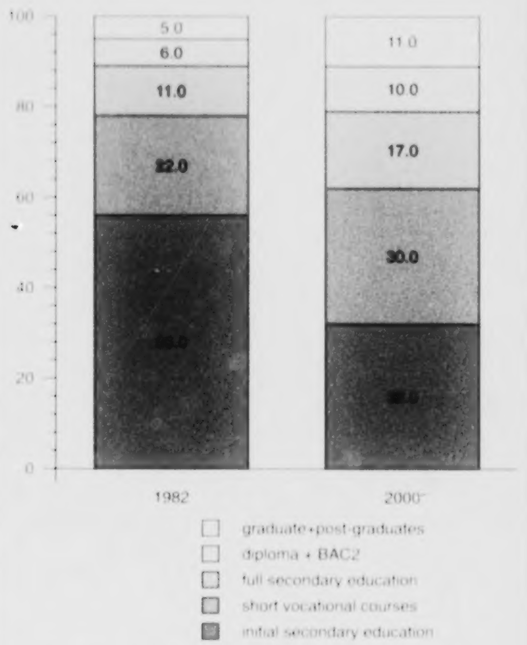
[106] Currently a forecast of manpower supply and demand by levels of qualification is being carried out on behalf of the French Ministry for Labour, Employment and Vocational Training. Results are expected by autumn 1998.

Figure 2-25: Manpower demand by qualification; F 1982 - 2000 (%)



Source: Rajan 1989

system has already responded - e.g. by creating more vocationally-oriented qualifications, by reinforcement of enterprise-based training and by the spreading of open learning - education and training policy is asked to improve basic education as a basis for life-time learning, to encourage the inclination to learn and to offer due recognition for educational achievement in the labour market.

A recent scenario built by BIPE Conseil (Aguettant/Ait-Kaci 1997) confirms these former projections on the whole. Although a considerable increase in employment for the whole economy is expected in the years up to 2005[107], the net change in employment is expected to be negative for agricultural workers and unskilled blue-collar workers. Concerning the job prospects of graduates from education and training in the years to come, a significant increase in qualifications required of young people is to be expected.

Since overall job offers for young people (550 000 to 650 000 per annum) will be insufficient for the number of graduates (around 760 000 in the year 2000) the integration of school and training leavers into working life will continue to be difficult.

> The authors conclude: "The major risk for the years to come is the global insufficiency of jobs offered to young people and not a structural imbalance between the needs of the economy and the people leaving the educational system. Those with the lowest training levels will be most affected by unemployment. In view of the threat of persistent unemployment tendencies towards a prolongation of initial education and training may continue…" (Aguettant/Ait-Kaci 1997, p. 8)

5.5 Conclusions

In summary, it can be said that despite different methods, delimitations and educational systems in the countries under consideration, the forecasts come to the conclusion that structural change in industry and society goes hand in hand with a major increase in the qualification requirements of the work force. Individuals with a low level of or no vocational qualifications, who already face the most difficult problems on the labour market today, will probably have little chance of finding stable and promising employment in future.

The future development of employment amongst those with intermediate qualifications, i. e. people who have completed initial in-school or in-plant vocational training, is assessed differently in some cases. All forecasters do, however, stress that on this level considerable substitution processes are to be expected and that these qualifications are viewed as problematic unless they are made more attractive. Parity of esteem for practical and theoretical education and training can best be achieved in the employment system in respect of income, appropriate employment, career prospects and further training opportunities.

All in all, however, our knowledge and methods in anticipating future trends are (and will always be) limited. Progress in forecast research should concentrate on, among other things, the following aspects, which are not yet sufficiently treated in forecasting:

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107) On the assumptions of a reference scenario (GDP growth of 2% p.a. in the period 1996-2005), employment growth would be 0.8% p.a. or + 180 000 jobs.

- analyses of the mechanisms and factors which influence specific segments of the labour market;

- more detailed analyses of the "problematic" and "key sectors" of the economy and their skill needs, in particular private services, public sector and technology-intensive manufacturing sectors;

- development of concepts and of ways of consider- ing occupational mobility of workers (supply side) and the occupational flexibility of jobs (demand side) in forecasting, and how these match one another;

- up to now supply and demand forecasts are mostly calculated independently from each other, although research has revealed close interactions between both. It would be very important for forecasting to consider these interactions and feedbacks more closely although this task may be extremely difficult from a methodological point of view (e.g. considering income and behavioural components, different time gaps of feedbacks, individual choice and recruitment behaviour, etc.);

- taking into account the "European perspective", both within national forecasting and in a European forecast activity.

6 Implications for research, policy and practice

6.1 VET and socio-economic background

(1) So far little consideration has been given in research or in policy discussions to the importance of demographic developments for initial training (European Commission 1995a). Existing research and statistical reports have focused far more on continuing training - not to mention considerable research done on the impacts of demographic change on the labour market and on social security systems.[108]

It is quite obvious that the most important contribution of demography to VET is to determine and predict the size of the relevant population groups. Furthermore, demography must provide information about the structure of people (e.g. by age, gender, nationality) interested in undergoing education and training. Identification of the learning preconditions for these different groups can be viewed as a joint task for educational science and demography.

(2) Another broad research field is examination of the subsequent career paths and the live courses of people after they have left the education system. This involves both quantitative and qualitative analysis of the links between education and employment, social background and later social position.

An important research task in this field would be to analyse differences in inter-generational and intra-generational equalities and the question of whether there is an age-related change in economic and social performance. Inter-generational effects indicate the different education and training opportunities and labour-market environments different generations are exposed to.

Thus, for example, those generations born after World War II faced, when entering the labour market (until the early seventies) more favourable conditions than cohorts born in the sixties and seventies. These baby-boom cohorts were not only more exposed to intra-generational competition for training places and jobs with a high number of persons of the same age. They also entered training and the labour market at a period of increasing unemployment and economic uncertainties.

(3) The question whether demographically-induced inequalities can be compensated for in later years or whether or not educational and occupational decisions, once taken, are irreversible (Ginzberg et al. 1951) is very much disputed even today. Critics refer to the procedural character of vocational choice and the indeterminate nature of occupational careers (cf. Part Four).

There are many possibilities for human capital accumulation by on-the-job and continuing training which appear to be rather successful. In order to legitimise the substantial resources devoted to further training, intensive research on this question, based on, for example, longitudinal or biographical data, is required. One problem is, of course, the very long time needed for such a study; it should be considered whether existing panels can also be used to answer this question.

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108) Reference should be made to the EOPI network (cf. annex of this report)

A certain contradiction to the effectiveness of further training refers to the hypothesis that disadvantages in early youth will more or less continue throughout life. Comparative analyses reveal that in many countries the educational opportunities of people of a lower social origin could not be much improved during the expansion of the education and training systems (Blossfeld/Shavit 1993).

(4) A related aspect is the question of the effects of an ageing society on economic inequality, in particular on income inequality. Although there is a significant risk of underrating the distributional significance of an ageing population, further theoretical and empirical research is needed (Weizsäcker 1996). A review of the literature on the demographic effect on wage profiles indicates that in the short or medium- term, the effects are usually rather small. Further research in this field should therefore concentrate on the long-term effects of demographic change (Klevmarken 1992).

(5) The same applies to the future impact of ageing on public expenditure and, in particular, on VET funding in Europe.[109] Further aspects for future research could be the implications for new occupations related to the ageing process and, in economic terms, the effects on labour productivity needed to compensate for the effects of ageing[110] and the induced impacts on employment and labour market.

Research on demographics thus should highlight the long-term demographic impact on VET capacities, on continuous training and on appropriate concepts of training and work for an increasing number of older people.

(6) Policy and practice should not underestimate the reinforcing or compensating effects of a change in behaviour towards education and training. The direction of these effects will depend in particular on the attractiveness of alternative training courses to the young generation and their parents. Stable employment prospects and achievable occupational careers are the most important criteria for training decisions.

In view of the fall in the rate of renewal of the working age population and of the diminishing supply of new and updated skills, measures are necessary to compensate for or at least to alleviate its effects. In quantitative terms, these could be measures aimed at the mobilisation of groups which today still are under-represented in initial and continuing training.

(7) In qualitative terms, compensation for the decreasing future numbers of graduates from training should focus on enhancing quality and updating training contents: replacing numbers by quality. If predictions that our future economies will need far fewer workers prove accurate, the decrease in graduates at all levels should not be regretted, but seen as a chance to renew education and training systems. But it would be important for policy makers and firms to be prepared for appropriate measures to be launched in the near future, bearing in mind the long periods before newly-trained graduate cohorts pass through the labour market.

(8) These policies should be complemented by greater efforts to help older workers catch up with missed training, giving them a second chance. Prerequisites for this would be a new co-ordination of initial training and continuing training as well as the development of adapted curricula and pedagogies suited to the learning capabilities of older (and experienced) workers. Furthermore, training should take account of the previous education and training level or of deficiencies of workers caused, for example, by previous periods of long-term unemployment. Related measures should include the introduction of new technologies, and the motivation and support of the persons concerned.

(9) Furthermore, the recognition of skills acquired through occupational experience or by non-formal learning should be fostered. In view of the future need for social work due to the ageing population, equal recognition should be given to life experience in family, neighbourhood work, social or cultural engagement, etc. (e.g. experience in care for older persons, housework, cultural abilities, etc.).

(10) The changing needs of older people should be anticipated much more in existing training structures. Surveys of their specific needs and problems should be carried out in order to gain more information on the occupations and jobs necessary to meet these demands in future. This could refer to older, still vig-

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109) For a review on national projections of pension expenditures cf. Franco/Munzi 1996.

110) Cf. for preliminary results of a model calculating the implications of ageing for labour productivity, European Commission 1996c, pp. 37 ff.; 1997b, p. 10.

orous and active persons as well as to the different needs of those who are evidently handicapped.

(11) In order to anticipate changes in demographic and behaviour-induced changes in the numbers of participants in education and training, as well as in the scope and qualification structure of the future labour force supply and demand, suitable planning instruments should be developed. The EU could support countries in solving methodological questions and with the installation of suitable databases and thus proceed to a European forecasting activity. It is essential that this instrument should also include flow data and transitions, thus indicating needs for retraining and continuing training.

The European Commission as well as the Member States could also create or support the establishment of panel surveys or cohort surveys in the Member States and/or at the European level (cf. also Part Three, chapter 3). However, these longitudinal databases would have to be comparable in their methods and delimitations and should refer to a common minimum catalogue of biographical standards.

6.2 Outlook and challenges

Recent developments in technologies, work organisation and their implications for skills, learning concepts and teachers/trainers imply new challenges for research and policy in vocational training. Some of these challenges will be discussed briefly.

Call for a change in perspective

It becomes increasingly important that qualification and VET research should not be limited merely to adaptation to economic and technological needs, i.e. to identifying "objective" skill requirements resulting from the use of new technologies and from changing structures of work organisation. Moreover, research should be much more oriented towards the question, "in what way vocational training and further training will be given an autonomous role in the framework of technological development and changing work tasks?" National VET systems offer a basis for responding to firms innovation needs and organisational developments.

From the European point of view the question still remains open as to how to promote human resources in order to stabilise new forms of work organisation by means of self-evolutionary systems, instead of an exogenous implementation. A decisive interface is the system of vocational training. VET could be highly important and even a necessary condition for implementing and using innovation rather than creating it.

Technological and work-organisation innovations for maintaining "European competitiveness" are therefore also challenges for the reform and further development of vocational training - transcending all forms of national peculiarities.

Need for a comparative VET research

In the framework of internationalisation, convergent trends in work organisation are supported by technologies that differ only marginally on a general level. But they seem to determine vocational qualifications in a less definite way. This has been proved by European comparisons which reveal similar technological change and productivity strategies with different national VET systems and qualifications of workers. It would be important for European VET research to analyse the specific capacity of a VET system for stimulating innovations and development processes. Methodologically, those comparisons should include the functional totality of macro and micro-level parameters. The specific industrial context as well as its embeddedness in the social and macro-economic context should also be considered.

Against the background of increasing demands on the innovation capability of vocational training, increasing importance should also be attached to the questions of the didactic design of new training processes, the organisation of training and its integration into learning environments. Two aspects should have priority: the first one relates to the increasing need for differentiation, which contributes to the further development of individual training and further training careers. The second aspect should aim at the definition of learning-conducive potentials within the working process and find ways to make better use of ICTs in the learning process.

Need for an interdisciplinary VET research and policy

VET research and VET policy should be positioned much more in the context of economic and industrial policy as well as of social and labour-market policy. Interdisciplinary VET research should thus combine analyses of the design of vocational training and further training with those related to work schemes and to industrial and cultural parameters.

Approaches of a closer connection of VET reforms with reforms in the field of technique and work show the growing importance of "learning in the workplace" and an increasing demand for "learn active" jobs.

Against the background of the forecasts, a number of problems are arising concerning the future labour market and the implications for educational and training policy. Educational policy measures, however, cannot raise overall employment in the short and medium-term but can support structural change and the allocation of people and jobs by measures on continuing training, life-long learning and a future-related education and training. Taking into account the freedom of individual educational and occupational choice, there is a need for efficient educational counselling and the implementation of attractive educational and vocational opportunities.

In this context, it is important:[11]

- to offer sufficient educational opportunities to ensure that the individual can enter and complete an appropriate training course;
- to identify an individual's insufficient or mismatched qualifications;
- to implement educational offers which take account of the structural change in the labour market and employment;
- to create equal chances for general/theoretical training and for practical training and to improve the permeability between the different education and training courses;
- to offer sufficient further training courses to minimise the risk of unemployment or to facilitate the possibility of a re-entry into working life.

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[11] Cf. BLK 1995, pp. 67 f.

Part Three

Vocational Choice, Transitions, Continuing Training and Disadvantaged Groups

In an ideal way, the training process can be defined as the sequence from entry into VET through to exit and transition to other areas, in particular the labour market (figure 3-1). "Thresholds" have to be passed at each transition. Each of these thresholds is associated with certain needs of co-ordination and organisation concerning the size, qualification level and structure of the applicants for training or jobs and the corresponding supply (Mertens/Parmentier 1984). A further factor for co-ordination which will be addressed in Part Four, is the content of training and work.

Against the backdrop of postulated theoretical explanations, the discussion will first examine the social, economic and psychological contexts of vocational choice which is to be seen as a long-term process with individual values, motivation structures and preferences for particular training and occupation emerging.

Decision-making within a context of uncertainty plays an important part in determining the role of training and vocational guidance offering information in an attempt to reduce those uncertainties. The question will be raised whether vocational guidance should consider more than it has done so far, the findings of psychological research on vocational choice.

The process of initial training itself is discussed in a second chapter. Since a comprehensive survey of all national specificities of training would be too exhaustive, discussion will focus on the different forms of apprenticeship training found in European VET systems and on their responsiveness to changes in economies and labour markets.

The "2nd threshold", the post-training transition to subsequent fields of activities - in particular the transition to the labour market - raises a number of issues which will be examined in the light of theoretical and methodological approaches (chapter 3). Particular emphasis will be given to the institutional aspects of the transition process, for example the implications for VET design of essentially skill-focused or organisation-focused labour market "spaces".

The training process does not end with the transition to a job. Changing job requirements and labour market conditions increase the need for an adjustment of skills via continuing training. The conditions and relationships of CVT with other socio-economic areas, as well as aspects of organisation and co-ordination will be discussed in a fourth chapter.

In a world of shrinking job opportunities and increasing skill requirements those people who cannot or are supposed not to fulfil these demands are in danger of being marginalised. The problems of disadvantaged groups - socially disadvantaged as well as people with disabilities - are in the focus of the final chapter. Here, distributive effects and macro-economic impacts will be discussed as well as individual effects for beneficiaries and adequate measures to integrate these people into the labour market.

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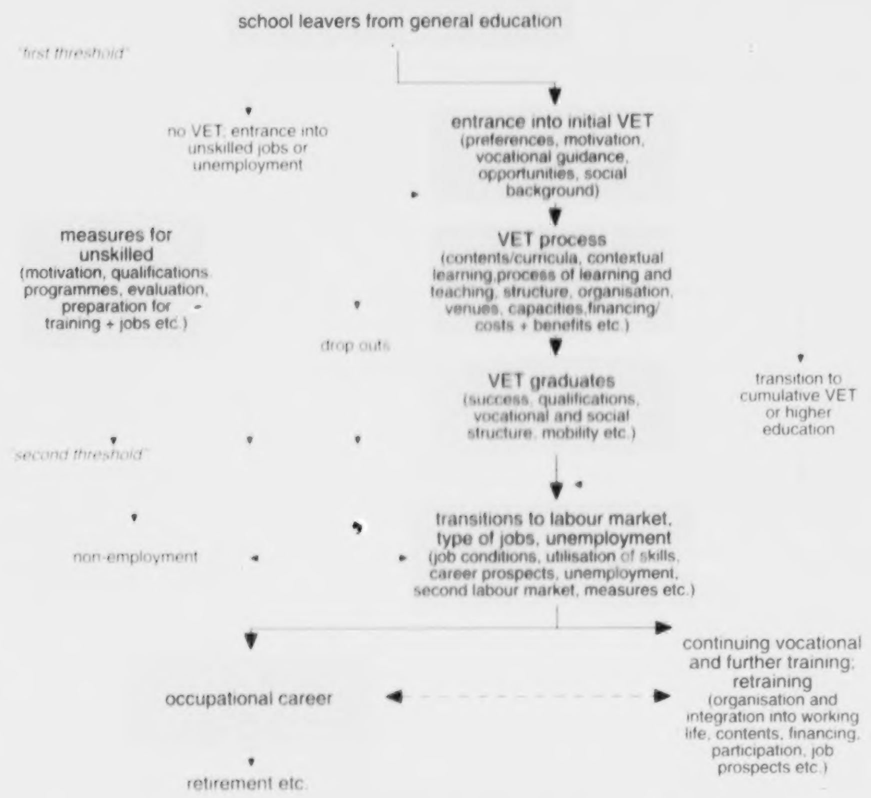
Figure 3-1: Vocational education and training: Standard biographical approach


school leavers from general education
"first threshold"
no VET, entrance into unskilled jobs or unemployment
entrance into initial VET (preferences, motivation, vocational guidance, opportunities, social background)
measures for unskilled (motivation, qualifications programmes, evaluation, preparation for training + jobs etc.)
VET process (contents/curricula, contextual learning,process of learning and teaching, structure, organisation, venues, capacities,financing/ costs + benefits etc.)
drop outs
VET graduates (success, qualifications, vocational and social structure, mobility etc.)
transition to cumulative VET or higher education
"second threshold"
transitions to labour market, type of jobs, unemployment (job conditions, utilisation of skills, career prospects, unemployment, second labour market, measures etc.)
non-employment
continuing vocational and further training; retraining (organisation and integration into working life, contents, financing, participation, job prospects etc.)
occupational career
retirement etc.

1 Vocational choice and guidance

This chapter has to do with selecting a specific education or training path as well as the questions how and for what reasons a decision is taken. The decision makers are individuals, firms or the state.

We are going to focus on describing *individual choices*.

Aspects of the training decisions of *enterprises* were already addressed in connection with the institutional framework (Part One) and the human capital and cost-benefit aspects (Part Two). We can assume that the training decisions of firms are determined to a far greater degree by economic considerations than are those of individuals or the state.

This does not rule out that firms also orient themselves towards criteria in their training decisions which are only indirectly linked with cost-benefit analyses. These may be strategic considerations concerning the long-term safeguarding of human resources by means of the recruitment and promotion of young staff, improving the climate at work and creating a corporate identity since staff may feel more closely linked to their company after training, improving the image as a training plant and perhaps even a social obligation plays a role in enterprise decisions on training.

The education and training decisions of the *State* are also based, as discussed in Parts One and Two, on social cost-benefit considerations and here the emphasis is on economic growth, employment, innovation and competitiveness. What is equally important, and in many countries anchored in the constitution, is the goal of promoting, by means of education and training, social policy objectives, such as equal opportunities, the integration of disadvantaged and other target groups and the cultural, social and political involvement of people with a view on social cohesion and political stability.

1.1 Individual vocational choice in a changing society

The social, economic-technical and individual framework conditions in vocational choice have changed dramatically in recent decades (Kleffner et al. 1996): normal traditional biographies in training and work are open to a dwindling number of young people (Raab/Rademacker 1996). The youth phase is being destructured, the role-understanding of the genders is changing. The world of work is imposing stiffer requirements whereby new, promising jobs are being created - and, at the same time, at threat from unemployment and under-utilisation. Flexible and "untypical" jobs may lead to a destandardising of gainful employment and, as e.g. Beck (1986) expected, to an erosion of normal working relations.

Given the shift away from "normality" in life patterns, expectations about forward-looking training and career are becoming increasingly difficult to meet. This also renders the anticipation of likely (normal) sequences in training and occupational biographies increasingly obsolete (Kohli 1989; Wohlrab-Sahr 1992; Vincens 1997a).

Furthermore, there is a certain degree of intransparency, given the lack of clarity and differentiation formats of training courses both on the national and on the transnational levels. For this reason the European Commission (1995a) mentions in its White Paper "Teaching and Learning" three fundamental conditions which must be met in order to promote occupational flexibility and counter the alienation of social groups: sufficient information, guidance assistance and improved permeability of education.

In order to increase the transparency of education and training schemes in the EU[1], several obstacles have to be overcome which are based on differences in the guidance and information systems and the occupational structures in Member States. The European Commission (1995a) identified three main obstacles to promoting access to education and training:

- clear and simple assessment of training provided outside the education system;
- problems of the anticipation of occupational developments and skill requirements;
- individual attitudes linked to social origin. (p.34 f.)

On the other hand, however, occupational problems in all EU Member States are surprisingly similar: problems in the transition from training to work, unemployment and inappropriate employment, exclusion of the disadvantaged and class-related obstacles to social advancement.

1.2 Determinants of vocational choice

The "choice" of education, training or an occupation by an individual is taken in conjunction with the intended transition to another status. The destinations are secondary education courses, training, work, but also return to working life after unemployment or a period of inactivity. Choices and decisions always imply the existence of alternatives which however do not always exist or are not equivalent in reality.

Viewed ex ante, decisions have to be made under a certain degree of uncertainty. This is all the more so,

- when little information is available particularly about future-oriented or alternative opportunities;
- the more quickly the training and labour market situation changes;
- the less clarity the individual has about his personal interests, skills and goals;
- the earlier a decision or preliminary decision is taken and;
- the less reversible a decision is, once it is made.

In the "ex-post analysis", decisions which have been taken can be characterised for instance in statistics as "behaviour" and as "participation in education and training or in the labour force" (cf. Part Two).[2]

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[1] In this context, the European Commission proposes the setting up of "knowledge resource centres", which should act as an interface between the supply and demand for information on training.

[2] Here attention should be drawn to the analytical division between demographic and behavioural components.

A choice of training and occupation, and this is something on which research on vocational choice now agrees, is only made after a longer process in the course of which certain attitudes, intentions and expectations emerge. The decisive factors for vocational choice are not just information about existing options or opportunities but more particularly also (Meijers 1996):

- individual personality patterns, such as intellectual skills, intrinsic[3] and extrinsic[4] characteristics;
- social selection (social origin, socialisation, gender role, ethnicity) and meritocratic selection (advice, school career, exam grades);
- and the social environment (family, peer groups, information sources, guidance).

Härnquist (1978) tried to systematise these determining factors without wishing to explain the process of occupational choice and the individual valuation of these determinants. He distinguished:

- *individual factors*:
  - characteristics of persons (gender role, intellectual abilities, interests, ambitions);
  - environmental factors (social origin, peer groups, school environment).

- *institutional factors* (education/training system):
  - learning contents, prestige, differentia- tion of pupils, school career advice;
  - anticipated factors (admission preconditions, proximity, education funding).

- *socioeconomic factors:*
  - demographics (baby boom years, social/geographic distribution);
  - economic factors (rate of return, labour market);
  - social and cultural factors (standards, values, legitimisation of training, attractiveness).

However, a systematisation of this kind cannot explain the process of vocational choice in which, depending on the individual, these factors interact with varying degrees of intensity and weight nor can it explain the conditions underlying its creation. For this purpose, other approaches are suitable which are briefly summed up in the following.

A few preliminary comments:

- Information is never "complete" and as a rule contains aggregate or average data. Nor is it clear to what extent the future can be anticipated on the basis of these data which are supposed to be of relevance for the individual.

- Choice of a certain type of training is not automatically linked to the choice of a specific occupation or job. Depending on the width, transferability and polyvalence of training there is a spectrum of concrete occupational opportunities.

- The choice of training and an occupation is always limited by the existing constraints in the training system and on the labour market. It is frequently the case that recourse must be made to the next best preference, in the worst case for any type of training (motto: "any kind of training is better than none").

A further aspect concerns the relationship between demographic development and educational and vocational choice. Empirical studies for the USA, examining responses in educational choices and behaviour of individuals born during different phases of demographic cycles indicate a close interaction (Falaris/Peters 1992). People born during a demographic upswing with large age cohorts following them, take longer to complete schooling than comparable individuals born during a demographic downswing.

One explanation for this prolongation of education and training is that individuals will delay the completion of schooling in order to avoid entering the labour market when the number of potential competitors is high (Wachter/Wascher 1984). Another explanation would be - with the same result - the accumulation of human capital in order to increase individual competitiveness on the labour market (Blien/Tessaring 1989 with German data).

In any case the consequence would be that this behaviour of "upswing cohorts" will result in a greater concentration of individual transitions into the labour market during periods when youth population is high (Falaris/Peters 1992 with US data), with resulting effects on unemployment, earnings and careers.

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[3] Fun, talents, interests, personal development related to an occupation

[4] Future plans, career, income, status

1.3 Approaches

In vocational choice research[5] three fundamental approaches can be identified: economic, sociological and psychological concepts.

Economic approach

Economic approaches to explaining vocational choice are based on welfare economics and on the human capital theory. Whereas in welfare economics the emphasis is above all on utility and the preferences of rational individual and social/collective choice (cf. for an overview, Sen 1995 and the references mentioned there), the classical human capital theory is oriented more towards the motives of educational and vocational decisions. Both theories are based on the assumption of a "homo oeconomicus" who takes a rational decision in full knowledge of all information, of the future, of his own preferences and of the consequences of alternative decisions.[6]

The human capital theory was already presented within the framework of the decisions on educational investment (cf. Part Two). It is summed up very succinctly by G. S. Becker in his Nobel Lecture (1993) in the following manner:

> "Human capital analysis starts with the assumption that individuals decide on their education, training, medical care, and other additions to knowledge and health by weighing the benefits and costs. Benefits include cultural and other non-monetary gains along with the improvement in earnings and occupations, whereas costs usually depend mainly on the foregone value of time spent on these investments" (p. 392).

Therefore, individuals choose education or training that will provide maximum rewards: "individuals make career choices regarding amount of schooling, type of schooling, and occupation that are optimal for themselves; that is, individuals make rational decisions to match their own profiles with features of jobs and occupations" (Hotchkiss/Borow 1990, p. 272).

Further developments of the human capital theory, which plays a dominant role in State educational decisions until today, take into account a limited rationality in the case of shortcomings, such as imperfect information and decision-making behaviour in the case of uncertainty, unclear preferences or imbalanced job markets[7]. Economic approaches, however, are scarcely able to explain the emergence of an individual decision within the complex structure of individual, social and economic interactions.

Sociological approaches

Sociological approaches focus on the socio-economic environment, social origin and thus class-related determinants of vocational choice. The individual decides about limited alternatives which are characterised by social and economic conditions.

In this context vocational choice appears as a socially controlled process of allocation of occupations.[8] "The society" has a fundamental interest in the roles linked to specific positions being taken on and upheld. To this end, it exerts an influence on the individual and on his environment which supplies him with information and guides him. The society also controls access to occupational positions, whether directly by means of agents (institutions, persons) or indirectly by influencing the social orientation of actions.

Vocational choice is seen here as a progressive narrowing of occupational alternatives beginning with the choice of the specific school education, over a decision on training up to a choice of occupational position. In all stages of the decision making process various agents play a role: the family, teachers, career guidance, peer-groups, media and later on colleagues and superiors.

Although sociological approaches do not dispute the importance of the individual self-determination, what

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5) Vocational choice is meant here in a wider sense as a choice of education, training or an occupation. It includes guidance on education and training for younger people as well as career guidance on further training and employment for adults.

6) This is a "closed" decision-making model without any uncertainty.

7) In the sense of an "open" decision-making model.

8) Here we refer to sociological theories which were developed by Daheim (1970) and later refined (cf. for an overview, Busshoff 1989).

is missing are statements about the difference between various orientations and role expectations even in socially homogeneous groups as well as on interaction and learning processes. Nor is it satisfactory that the people choosing an occupation are more or less seen as mere passive objects at the mercy of social conditions and agents.

Psychological approaches

The following overview of psychological approaches to explaining vocational choice is based on the studies by Busshoff (1989, 1992) and Meijers (1996), discussing four psychological approaches: development psychological, learning psychological, differential psychological and decision theoretical approaches.

Vocational choice as a development process

The development psychological concept of vocational choice was elaborated by Ginzberg et al. (1951) and Super et al. (1957) as early models of the analysis of life biographies. It was further developed in particular by Gottfredson (1981), Paris/Byrne (1989), Heinz (1995) and others.

Meijers (1996) sums this up as follows: according to the developmental approach vocational choice is a process which goes parallel with the development of a "self-concept". Gottfredson (1981) stated that the self-concept regarding the role of gender is completed around the age of 10: at this age, individuals have already eliminated certain careers which do not correspond to their own image on their gender-role, which also is a result of socialisation.

Around the age of 12, the self-concept is expanded to include the "social class identity" with further career possibilities being eliminated. At the start of secondary education a "zone of acceptable career alternatives" is emerging, with a range of occupations corresponding to the individual's self-concept.

After the age of 14 the "unique self" develops with strictly personal preferences and estimations. The zone of acceptable alternatives now is being explored more and more, with further occupations and careers being eliminated. At the end of this process a number of compromises have to be made, because the "ideal" training or job cannot be found immediately or the image made of a job does not correspond to reality. Gottfredson's "zone of acceptable alternatives" has been proved by several empirical studies (e.g. Brooks 1990; Super 1990).

Vocational choice as a learning process

Learning psychological concepts see vocational choice as a learning process[9]: The individual gathers experience, in interaction with inherited factors and environmental conditions, and learns from them. This leads to the emergence of the self-concept and certain task-approach skills which determine the direction of vocational choice. Each decision is a new learning experience and has effects on the self-concept, on problem-solving and thus on other actions of relevance for vocational choice. A chain of this kind of learning experiences then determines the choice of training and occupational routes.

Vocational choice as a matching process

Differential psychological approaches explain vocational choice as a matching process. The individual has certain personal characteristics (traits) and factors which together determine his personality pattern. These abilities, interests, values etc. of an individual are compared with constructed personality models.

Holland (1987) is viewed as the main advocate of the trait-factor theory. He developed from this a "theory of topological vocational choice".[10] In this context the personality models are on the one side and environmental models on the other. Environmental (e.g. job) requirements are assessed by means of an environmental assessment technique and draw on the same items as personality models.

Vocational choice is now seen as a matching process, in which the individual compares this personality pattern with that of the environment (occupations) and selects the most suitable occupation. The underlying hypotheses of a clear identity and congruence with the selected occupation so far could scarcely be proven empirically, however. What is furthermore criticised is the rather static character of this vocational choice model (Brown 1987) and a narrow view of the individual personality structure, which does not give enough consideration to interactions between man, his environment and socialisation processes (Lappe 1996).

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[9] They share many common features with development psychological concepts in that learning experience leads to the emergence of a self-concept which can be seen as the basis for vocational choice.

[10] Holland differentiates between the following personality models or vocational requirement types: investigative (intellectual, scientifically oriented), conventional (adapting), entrepreneurial, artistic

Decision theoretical explanations of vocational choice

The numerous decision theoretical approaches are based on the following basic assumptions (Busshoff 1992).

- A decision-making *situation* is given when an individual recognises a need for action, takes action and selects the alternative which appears advantageous and feasible to him.
- The decision-making *process* is broken down into (i) the perception of a problem, (ii) the search for information, (iii) the development of alternatives, (iv) the decision, (v) realisation and (vi) the overcoming of post-decision-making problems.
- Decision making *behaviour* can be broken down - depending on the type of personality - into the opposites: rational vs. intuitive decision; active vs. passive search; and independent vs. dependent personality structure.

The many different decision theoretical approaches[11] cannot be discussed individually here. Busshoff (1992, p. 88) proposes to define a synthesis concept on the basis of these psychologically oriented explanations of vocational choice:

> *Vocational choice*
> - ***"is an interactive learning and decision-making phase***
> - ***which is integrated into lifelong occupational development and***
> - ***is subject to specific social conditions and influences and***
> - ***is a repeated process,***
> - ***the outcome of which contributes to people pursuing different occupational activities."***

1.4 The role of vocational guidance[12]

The role of career guidance is to take into account the aspects of vocational choice described above, the individual preconditions and the type of decision-making situation in which people choose a vocation. It is also responsible for providing comprehensive information and assistance. Information and assistance of this kind refers for instance to the training and labour market situation, the clarification of the preconditions and requirements for initial, continuing training or occupational activity, to information about training in the company or activities abroad.

Individual information requirements

In order to investigate individual information requirements and the adequate provision of this information by career guidance, Ertelt/Seidel (1997) ideally break down the decision-making process into a pre-decision, a decision and a post-decision phase. The person selecting an occupation needs:

- factual information about alternatives and prospects;
- evaluative information which results from a comparison of the self-concept with the environmental conditions;
- and personal process information which indicates which and how many of the factual and evaluative premises are to be connected with each other in what way.

In line with Peterson et al. (1996), these processes and the necessary sets of knowledge, skills and cognitions can be presented in the following way *(figure 3-2)*.

The decision-making model is a diagnostic tool to identify the individual status in the decision-making process. The information to be provided by career guidance, therefore, refers to the:

- generating of action alternatives;
- assessing of action paths and the individual's ability to take a decision;
- drawing attention to potential conflicts and opportunities for implementation on commitment.

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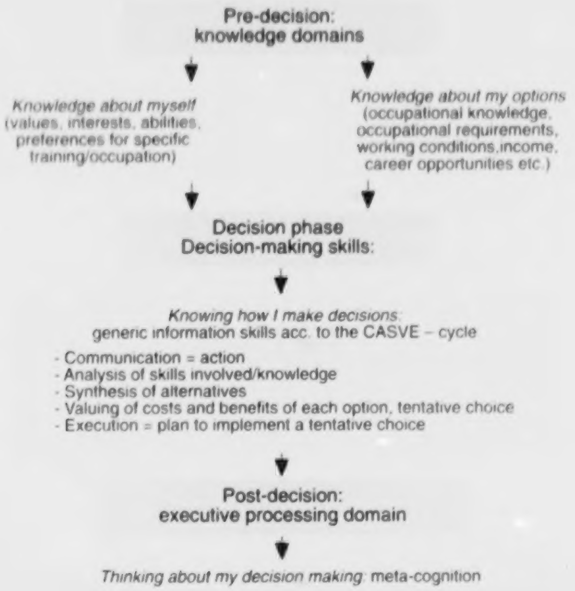
11) E.g. vocational choices as an informative-anticipatory process, approaches which analyse the course of a certain decision-making process, approaches which take into account motivational and social interaction situations.

12) *Chapters 1.4 to 1.7 are mainly based on the contribution of B.-J. Ertelt and G. Seidel (1997): Information requirement for individual occupational decisions.*

Figure 3-2: Educational and vocational choice: The process of decision-making


Pre-decision:
knowledge domains
Knowledge about myself (values, interests, abilities, preferences for specific training/occupation)
Knowledge about my options (occupational knowledge, occupational requirements, working conditions,income, career opportunities etc.)
Decision phase
Decision-making skills:
Knowing how I make decisions: generic information skills acc. to the CASVE – cycle
- Communication = action
- Analysis of skills involved/knowledge
- Synthesis of alternatives
- Valuing of costs and benefits of each option, tentative choice
- Execution = plan to implement a tentative choice
Post-decision:
executive processing domain
Thinking about my decision making: meta-cognition

Source: Peterson et al. 1996

The quality of career guidance and information systems depends on the extent to which they can adapt to the cognitive-emotional information processes and whether they offer suitable information and assistance. Against this complex backdrop of vocational choice, guidance systems which orient themselves towards the model of rational choice appear inadequate. They largely neglect the individual personality structure, the decision-making phase, conflicts and emotions and tend moreover to an information overload. Vocational guidance thus should be oriented more towards an open, heuristic model which gradually edges its way towards a solution (Walsh 1990; Ertelt/Seidel 1997).

Similarly, the Dutch Raad voor Studie- en Beroepskeuze (National Council of Career Guidance 1994, cit. in Meijers 1996) presents three conditions that should be met by modern career guidance[13]:

- Career guidance should not only focus on mere information, but consider the emergence of a work identity and provide the empowerment of the individual to develop "career-path skills".
- The presence of career guidance services should be continuous and accompany the process of choice.
- Career guidance should differentiate between different groups of persons.

1.5 Empirical research results

There now follows a discussion of some empirical studies for Germany by way of example which have to do with personality structure, guidance matters and the role of career guidance (Ertelt/Seidel 1997).

Two extreme personality types emerge from efforts to characterise those seeking guidance (evaluated with the cognitive mapping approach, CPM):

- individuals, who have a clear but generally abstract preference about occupational alternatives;
- individuals, who are considerably marked by their external problem situations (e.g. unemployment, poor marks) and play down their own abilities (Hick 1992).

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[13] These conditions refer primarily to educational guidance, but can basically be applied to vocational guidance, too.

In respect of the involvement of the people seeking advice in the guidance process and their information expectations, four dimensions of information demand were identified (Seidel 1995):

- information to assess occupational alternatives;
- information to define the individual's own problem situation, procedure and possible obstacles;
- information about occupational flexibility and assistance schemes;
- information to confirm the individual's own decision and to implement it.

A study *on information needs and on media use* refers to the information management of vocational guidance (Seidel 1997) and to the importance of the various information sources. In the first phases of the decision-making process, family, friends and the environment are the primary sources of information. Guidance with its information supply tends to be sought when people are weighing up the alternatives or in order to confirm and implement a decision.

The diverse need for information is also the result of an evaluation of vocational guidance (Kleffner et al. 1996). It has been shown that the vast majority of people seeking advice requires help and largely assess guidance as positive. Individual guidance is more beneficial than group counselling.

1.6 Institutions and systems of guidance in the EU

Although the problems and the process of vocational choice are similar, there are major differences in the EU between the guidance, assistance and information systems in the occupational field.[14] These concern access, availability, target group orientation, scale of services, qualifications of guidance counsellors and guidance methods (cf. for more information: Watts 1992; Watts et al. 1993; Ertelt 1989; Leclerq 1997).

For instance when it comes to the transition[15] to a secondary school, what counts in *Germany* is what parents want. Concerning the transition to training, the ways of influencing vocational choice differ, depending on the German Land. They extend from non-binding guidance schemes in schools up to school route recommendations with trial instruction (Max-Planck-Institut für Bildungsforschung 1994). Vocational guidance, which also involves placement in training places in in-company training is mainly undertaken by nation-wide vocational information centres and by guidance consultants of the Federal Employment Services.

In *France* more consideration has been given to parents' choices since the 1980s. The schools, however, still have procedures for school orientation. For individual consultations there is a broad system of information and orientation centres. Here, vocational guidance is to the fore. Pupils, who have failed at school and whose performance is not considered to be sufficient for "regular" general education, are oriented towards vocational training courses.

In *the UK*, vocational guidance is mainly provided by career services. Furthermore, there are career services in the individual schools, colleges and in the Training and Enterprise Councils (TECs). Their guidance however is not viewed as being very objective since they compete with each other for participants.

Koch/Reuling (1997) conclude that vocational guidance in these three countries, despite the extended rights of parents or those seeking guidance, does influence vocational choice in order to balance the demand for training with existing capacities. And Clasquin et al. (1997) go even further by describing particularly in France "orientation" as a formalised tool of a social process for socio-economic integration. In their view, orientation is not an isolated phenomenon, a simple technical function in the school training system but rather a deep and dynamic process for social regulation and selection.

Information systems

Extremely flexible computer-assisted career guidance systems (CACG systems) are becoming increasingly important. There is an almost confusing range of database systems, simulation games for occupations, matching systems up to psychometric tests and programmes to assist in finding one's own preferences and in the search for a workplace.

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14) Cf. also the country reports and the synthesis report on "Determining the need for vocational counselling among different target groups of young people under 28 years of age in the European Community" (CEDEFOP 1994/95).

15) Cf. for the following: Koch/Reuling 1997.

> However, the use of these information systems is impeded by a series of problems, for instance limited availability, inadequate quality, inadequate integration into the guidance services as well as a lack of objectivity and validity (Sampson 1993; cf. also the documents in: Bundesanstalt für Arbeit 1993).

Examples of institutions which develop the foundations for vocational information are the ROA (NL) and the IAB (D). They both provide vocational guidance on the basis of a wealth of statistical data with targeted information assistance on changes in training and occupational structures. However their "philosophies" differ:

- ROA develops short-term forecasts particularly about the replacement demand of individual occupations and training courses, supplemented by analyses on occupational mobility opportunities. The assumption is that this can lead to conclusions about occupational developments over the next few years i.e. when those seeking guidance today will have completed their training (Heijke 1994c). This and other information is used for educational and vocational guidance in order to inform about future job prospects (Metze 1995).
- IAB understands its "concept for differentiated information" as an alternative to forecasting. IAB argues that for several reasons forecasts have only a minor importance for individual training and occupational decisions. On the other hand, however, information on future job risks and chances are indispensable. To meet this conflicting demand, appropriate statistical data are compiled in line with the modular principle in order to be able to satisfy as many information needs as possible in a differentiated manner.
  The goal is to derive employment risks for individual occupations, training courses or groups of persons from these structural, development and mobility information. In the last few years this information concept was supplemented with estimates by occupational experts in different companies on occupational and training developments and, more particularly, with information about job requirement profiles (Parmentier et al. 1994; for an evaluation cf. Ertelt et al. 1997).

Focus of guidance

Despite the problems with delimitation and comparison, the following foci of career guidance activities can be identified in the EU (Watts 1992, Watts et al. 1993):

- information management: collection, processing and passing on of information about education, training, occupations, labour market, support services;
- individual counselling;
- work with groups;
- placement, follow-up and networking activities;
- managing internal services and external relations.

1.7 Conclusions

On the path to European career guidance[16], career guidance not only has a transnational but also a multicultural component. In this context a series of national and individual features must be borne in mind such as the attitude to training and a career, linguistic problems and communication habits, different cultural and behavioural skills as well as social environment variables (Ertelt/Seidel 1997).

Career guidance and information in the EU must take account of the different ethnic, individual and socio-cultural features and adapt their information and guidance concepts accordingly (Sue/Sue 1990; Capuzzi/Gross 1995).

On this basis Ertelt/Seidel (1997) formulated the following conclusions for the information concept of career guidance:

> The main tasks involve activating the demand for information and the targeted, differentiated further development of the information supply. An orientation towards the individual demand for information involves:
> - adjustment to the individual problem;
> - user friendliness;
> - activation and motivation to use information, assistance for individual estimation of success, image care;
> - systematic involvement of users and the further development of the media system.

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[16] Transnational computer-aided methods in the field of career guidance are becoming increasingly important. Examples are the European career guidance centres (initially promoted within the framework of the PETRA Programme) and the Europe-wide job placement service (EURES).

The key parameter in information demand is clearly the individual position in the decision-making process. This must be taken into account by career guidance officers.

On the information supply side, networking, transparency and comparability of information must be improved. What is needed here are graduated systems which can adapt to the width and breadth of users. At the same time, however, they should avoid an information-overload.

Special forms of information marketing should be developed by guidance services which also pay particular attention to transnational and multi-cultural aspects in order to overcome obstacles to the use of guidance and information services.

The studies referred to above impressively document the importance of personal guidance counselling when using information systems. This calls for appropriate qualifications in a demand-oriented information management, if possible based on common European standards.

What also seems essential is the setting up of a European vocational guidance science with a focus on occupational decision-making processes and information management.

2 Apprenticeship in dead-end sectors and occupations?[17]

2.1 Research questions

The level of unemployment and in particular of youth unemployment in the countries of the European Union is still unacceptable. Apprenticeship training (AT) seems to be a promising way of reducing the transition problems from training to work and of better adapting skills to job requirements. Several empirical studies confirm that people who have completed an apprenticeship have relatively good chances of finding a job. This chapter will analyse the sectoral and occupational distribution of AT in the light of structural changes in the overall labour market and raise the question whether apprenticeship training is correlated with growing and innovative sectors in the economy.

Responsiveness

To maintain its position in the longer term, the apprenticeship system itself must be responsive to changes in the labour market both in qualitative and quantitative terms. The qualitative component refers to adjustments in the training contents which may be more efficient if firms and social partners are directly involved. The quantitative component refers to the correspondence of AT with the overall distribution of occupations and sectors and its change within the economy.

It is clear that the future prospects of AT are likely to be brighter if, amongst other things, AT is concentrated

- **in growing sectors and occupations and if the sectoral and occupational distribution of AT reflects the changes taking place in the employment structure;**
- **in sectors which are innovative;**
- **in sectors which offer good opportunities for continuing training.**

Types of apprenticeship training in Europe

AT is a concept that is used in different ways. A more pedagogical definition characterises AT as a form of alternate learning taking place at two different learning environments, at school and in companies. The didactic-pedagogical integration of these two learning environments is expected to give added value.

Since a variety of training forms meet this definition, several restrictions are introduced for the following analysis:

- AT should be a form of complete initial training and not only a short course for gaining some work practice. Similarly, schemes for unemployed adults with an alternate character are not considered.
- Practical periods of short duration during full-time vocational schooling are not included.

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[17] *This chapter is a summary of the contribution of A. Gelderblom (1997): Apprenticeship: dead-end sectors and occupations? The contribution is partly inspired by a more comprehensive overview (Gelderblom/de Koning/Stronach 1997) and the material collected in its framework.*

However, it is rather difficult to draw a clear border. Full-time and school-based vocational systems are now introducing a practical component (e.g. the Netherlands, Sweden and Spain). In Norway, the full-time vocational school system even has changed almost completely into an apprenticeship system.

- According to the target groups, three types of AT will be taken into account:
  - AT as the continuation of the "normal" educational path in general schools. This refers more to the "traditional" or "regular" type of apprenticeship training which is still dominant.[18]
  - AT to improve the employment chances for young (potentially) unemployed people. These schemes are more directly targeted towards more vulnerable groups in the labour market. In fact, the alternating character is rather similar to the regular type of apprenticeship mentioned above. Examples are Youth Training in the UK, training-employment contracts in Italy and the "contrats" in France (especially the "contrat de qualification" and "contrat d'adaption").
  - AT in higher education which is emerging in several countries, sometimes within the institutional context of the traditional apprenticeship system (e.g. France), and sometimes as separate schemes (e.g. the Berufsakademie in Germany).

Table 3-1 gives an overview on relevant schemes in different countries as well as an impression of their relative importance. Since training systems in most EU countries are subject to permanent change, this overview is not completely up to date, however.

Methodology

In order to discuss the responsiveness of AT in terms of sectoral and occupational distribution, the corresponding distributions of apprentices in the various countries and, if possible its changes, were compared with the sectoral and occupational distribution of the whole labour force. In addition, scores for innovation indicators per sector (only for the Netherlands; cf. Gelderblom/de Koning/van der Weijde 1996) and scores for the participation in continuing training per sector were analysed.

2.2 The sectoral distribution of apprentices

Although there are of course country-specific differences, in broad terms there are many similarities in the sectoral distribution of apprentices. Training in the construction and installation sectors scores very high in all countries and the proportion of apprentices in manufacturing is in general higher than in the service sector. In the services sectors, apprentices are mainly trained in hotels and restaurants, (car) repair, (retail) trade and the care sector. In other service sectors such as business services, public service, banking, insurance and education, the number of apprentices is much smaller.

Traditional apprenticeship training

These patterns are widely confirmed when we look at the most important professional group of "regular" AT in some countries *(table 3-2)*. Apprentices are most often found in the field of mechanics, metal, construction and installation, hairdressing, hotel and tourism, sales and (other) specific craft occupations. This is a picture which more or less can be found in all countries.

In *Ireland*, apprenticeship occupations are mainly found in the following groups of occupations: construction, electricity, engineering, motor, printing, tourism and agriculture.

Portugal is an exception because services, computer and banking are among the more important professions. It must be mentioned, however, that the Portuguese AT system is still quite new and rather small; its future development is difficult to predict.

The same is true for the modern apprenticeship system in the *UK* which also offers training in growing industrial sectors. In quantitative terms, however, the most important sectors are still the traditional ones: engineering (18% of total starts April 1995 to October 1996), business administration (14%), motor industry (9%), hairdressing (8%), retail trade (7%) and construction (7%). Since most training institutions are in their starting phase, final conclusions about its development cannot yet be drawn.

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18) The report of CEDEFOP (Ni Cheallaigh 1995) gives an overview of the characteristics of the schemes in the various countries.

Table 3-1: Apprenticeship schemes in selected European countries (around 1992-1995)

Country	Scheme; categories: (a) "traditional" AT (b) AT for (potentially) unemployed (c) AT in tertiary education	Proportion of young people entering AT after full-time compulsory education (%)	AT participants as % of total workforce
Austria	Dual system (a)	42[1]	3.35 (1995)
Belgium	Commercial apprenticeship (a)	11	0.29 (1992)
	Industrial apprenticeships (a)		
	Centres for part-time training (EDO/CEFA) (b)		
	Occupation training contracts (b)		
Denmark	Initial vocational education, main course (a)	56	3.19 (1993)
	EGU (since 1993) (b)		
Finland	Apprenticeship (a)		0.22 (1992)
France	Apprentissage (a, c)	11	1.14 (1995)
	Contract de qualification (b)	12[4]	0.44 (1995)
	Contract d'adaption (b)		0.24 (1995)
Germany (West)	Dual system (a)	42[2]	4.59 (1994)
	Vocational academies (c)		0.03 (1994)
Greece	Apprenticeship OAED (a)	3	0.40 (1993)
Ireland	Apprenticeship (a)	10	1.38 (1992)
Italy	Apprenticeship (a)	4	2.21 (1993)
	Training-employment contracts (b)	29	3.06 (1990)
Luxembourg	Apprenticeship (a)	13	0.64 (1993)
Netherlands	Apprenticeship (a, c)	20[3]	1.98 (1995)
Portugal	Apprenticeship (a)	3	0.29 (1995)
	Professional schools (a)		0.26 (1993)
Spain	Apprenticeship (formerly employment training contracts) (a/c)	10	0.84 (1993)
	Training workshops and trade centres (b)		0.38 (1993)
Sweden	hardly existing (well developed full-time vocational education system)		
UK	(modern) apprenticeship (a)	34	0.86 (1994)
	Youth training, incl. skillseekers in Scotland (b)		1.05 (1995)

Sources: Gelderblom 1997, based (if not indicated else) on estimates in PETRA report on "alternance" (PETRA/BIBB 1994). [1] Schneeberger 1992 - [2] Tessaring (1993) gives a higher percentage (67%), due to a specific way of calculation (single age cohort entries, basis: Educational Accounting System BGR) - [3] Estimation NEI - [4] incl. contract d'insertion

Although the training itself is highly concentrated in certain types of sectors and occupations, this does not mean that the distribution workers with completed apprenticeship training correspond to the training structures.

The *German* Vocational Training Report 1996 (BMBF 1997) emphasises significant flows after completion of training to other sectors, especially from craft to larger enterprises and service sectors. This leads to a less concentrated distribution of ex-apprentices. Craft firms apparently train more apprentices than they need afterwards.[19] This situation is confirmed for Austria, too, where more former apprentices are to be found in the public sector, banking and transport than would be expected from their apprentices numbers.[20]

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[19] And in some cases the firm's return from apprenticeship training is higher than the costs, because apprentices may be deployed as regular semi-skilled workers.

[20] The distribution of apprentices in training reveals significantly lower proportions for the sectors mentioned compared to the sectoral distribution of workers who have completed apprenticeship training (Austrian Ministry of Economic Affairs 1995). Hofer/Pichelmann (1995) confirm this sectoral mobility of ex-apprentices in Austria.

Table 3-2: The most important occupational groups among regular apprenticeship training in selected countries (% of all apprentices)[1]

Austria, men, 1994	**Belgium, French Community 1992**	**Greece, 1993/1994**	**Portugal, 1995**
Motor mechanic (10%)	Food (18%)	Motor eng. (18%)	Services (26%)
Electric installation (9%)	Retail trading 16%	Electrician (16%)	Metal and machine tools (16%)
Carpenter (9%)	Metals (13%)	Machine technician (15%)	Motor mechanics (7%)
Bricklayer (6%)	Personal care (13%)	Hairdressing (9%)	Hotel, catering and tourism (7%)
Retail trade (5%)	Mechanical engineering (12%)	Plumbing and heating (9%)	Fishery (7%)
	Stone construction (7%)	Motorbody technician (7%)	Computers (7%)
	Electricity (6%)	Carpentry/furniture (6%)	Electricity (5%)
			Farming and food industries (5%)
			Banking and insurance (5%)
Austria, women, 1994	**West-Germany 1995[2]**	**France, 1994**	**UK 1995/96** (Modern Apprenticeship)
Retail trade (30%)	Commercial, administration (16%)	Retail business (22%)	Business administration (14%)
Hairdressing (15%)	Construction and related (13%)	Construction (19%)	Motor industry (9%)
Office, sales (14%)	Sales, trade (11%)	Hotel/catering (14%)	Hairdressing (8%)
Waiter and cooks (5%)	Mechanical engin., technicians (8%)	Car-repair (11%)	Retail trade (7%)
	Health occupations (7%)	Breadmaking (11%)	Construction (7%)
	other handicraft (7%)	Hairdressing (9%)	

1) with a share of 5% and higher; 2) new training contracts
Note: Belgium, Greece: updated country reports Greece and Belgium, CEDEFOP; Austria: Austrian Ministry of Economic Affairs: Berufsbildungsbericht (1995); France: CEREQ (1996); Portugal: IEFP; UK: Dept. for Education and Employment; West Germany: Federal Ministry for Education, Science, Research and Technology: Berufsbildungsbericht (1996)
Source: Gelderblom 1997

Apprenticeship training for (potentially) unemployed

The discussion up to now referred to regular apprenticeship. Another type of schemes are those more targeted towards the (potentially) unemployed.

One of the largest schemes is the Youth Training Programme in the UK. Compared to regular apprenticeship training, the trainees (especially females) of Youth Training are more frequently found in service occupations. However, training in service occupations is more or less the same as for regular apprentices: mainly clerical and secretarial occupations, personal service occupations and other sales occupations.

A somewhat similar conclusion can be drawn for the situation in Italy. According to the PETRA-report on "alternance", about 44% of the participants in the "training labour contracts" work in the service sector. This is significantly higher compared to the regular apprentices in Italy. Concerning the "contrat de qualification" in France, more than 70% of the employees are found in the service sector (Chastand/ Silberman 1995, cit. in Gelderblom 1997b).

Apprenticeships in higher education

The trend in certain countries (in particular the Netherlands, France and Germany) to broaden the existing regular apprenticeship training towards higher education levels is closely linked to the objective of enlarging the domain of practical vocational training.

According to CEREQ (1996) the first consequence of the extension of apprenticeship training in France to all diploma levels was that the range of host companies was expanded. Large industrial companies, for example, some of which had abandoned the practice of alternate training and established in-company schools, now offer places for apprentices.

Another result of the upgrading of apprenticeship is the interest that these kind of contracts prompted in new segments of the tertiary sector, such as financial bodies, consulting firms, hotel chains and mass marketing. This conclusion is confirmed for the Netherlands, too, where the growth of apprenticeship training for example in the process industry is clearly linked to the higher levels of diploma which can be achieved.

2.3 Changes in the sectoral distribution

The overall distribution of employment over sectors and occupations is changing. Looking at the developments in overall employment, the increasing importance of the service sectors is probably one of the most important trends. Within the services sectors, significant employment growth was observed in banking, finance, insurance and other services (which includes business services). These general trends were discussed in Part Two.

Another important development in overall employment which is relevant for AT is the position of craft-related occupations. The importance of these occupations in the EU has slightly fallen from 21.7% in 1987 to 20.8% in 1991. The data of the European Observatory for SMEs (European Network for SME Research 1994) reveal a further decline in the proportion of craft occupations for the period 1991-1994, although this does not apply to all EU countries.

In the former section we have seen that apprentices are often to be found to an above average degree in the smaller growth craft-related sectors and under-represented in prosperous service sectors. The under-representation of the service sector is all the more serious in the light of the following two factors:

- Apart from the trend towards the increasing importance of the service sector, there is a growing trend towards service-related occupations and work tasks within all sectors, including the production sector[21].

- Within the service sectors, apprentices are found relatively often in the repair sector, trade and tourism. These sectors, however, are among the ones with the least growth in the service sectors.

It becomes obvious that the concentration of AT in the smaller growth sectors is a concern for the future prospects of AT. However, we should not only look at the present sectoral distribution of apprentices, but also at possible trends towards an increasing service orientation of AT which gives a better indication of its responsiveness.

Tables 3-3 and 3-4 give an impression of the longer term growth of AT in the different industrial or occupational sectors in the Netherlands and Germany compared with the respective employment growth. The sectors are ranked according to employment growth. The figures for these two countries show in general that the growth of apprenticeship at least

Table 3-3: Growth of employment and apprentices in different sectors, 1970-1994, The Netherlands (%)

Sector	variation in total employment[a]	variation in apprentices numbers
(Other) commercial services	+115	+46
Public service and health care	+95	+323
Exploitation, renting of immovables	+87	-[b]
Banking and insurance	+54	+448
Government (incl. defense)[c]	+27	+112
Education	+40	-[b]
Repair services, lodging and catering	+27	+66
Trade	+20	+364
Transport	+18	+232
Other industries	+4	+432
Public utilities	+2	-[b]
Chemical industry (incl. oil- and rubber industry)[c]	+17	+178
Paper and printing products	-10	-62
Agriculture and fishery	-23	+410
Food, beverage and tobacco industry	-26	+56
Building and installation	-27	+20
Metal, machinery and electrotechnical industry	-28	-11
Wood and furniture industry	-33	-30
Mineral extraction	-62	-[b]
Textiles and clothing industry	-74	+11
Total	+11	+68

a) Employment growth is expressed in terms of full-time equivalents (labour volume) because this is the only way to put together consistent data over such a long period.
b) Very few apprentices are found in these sectors. This situation has not changed over the period concerned.
c) 1985-1992
Source: Gelderblom 1997

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21) See for example: Tessaring (1998)

Table 3-4: Growth of employment and apprentices by occupational groups, 1973-90, West-Germany

Sector	employment variation 1973-1989	variation of apprentices numbers 75-90
Other services	+123	- [a]
Health services	+74	+37
Administration/ clerical	+19	+28
Technical professions	+19	+11
Sale and trade	+12	+12
Food/provisions	+8	+6
Fitter/mechanic	-3	-6
Electrician	-9	+4
Transport	-12	0
Agriculture	-45	+10
Total	+3	+11

a) Very few apprentices are to be found in these sectors. This situation has not changed over the period concerned.

Source: Gelderblom 1997, based on: Alex 1994.

Table 3-5: Summary of changes in sectoral composition of traditional apprenticeship training in selected countries

	Period	Changes in distribution of apprentices by sectors or occupations
F	1979-1989	Growth of share of service sectors (trade, health and care, hotels)
A	1984-1995	Growth of craft trades
DK	1984-1991	Distribution quite stable
I	1990-1994	Limited changes

Source: Gelderblom 1997, based on: France: *Direction de l'Evaluation et de la prospective (DEP)*, cited in: Colliot and Brouch, *CEREQ, bref*, April 1991; Austria: Wirtschaftskammer Austria, *Lehrlingsstatistik*; Denmark: Updated country report on AT, prepared for CEDEFOP; Italy: The European Observatory for SMEs, fourth annual report, July 1996.

partly follows the developments in the overall labour market. The number of apprentices has grown faster in sectors which have above average employment growth.

The dynamics in the distribution by sectors or occupations in some other countries are summarised in *table 3-5*. In Italy and Denmark, the situation is quite static. In Austria the share of the over-represented craft trades has even increased.

The overall conclusion is that in some countries the distribution of AT has adapted to changes in the composition of the overall labour market. However, this is certainly not the case for all EU Member States. Moreover, the situation in which some sectors are clearly over- and others under-represented has not fundamentally changed.

One important remark about non-regular apprenticeships should be added. As mentioned above, other types of AT have developed in recent years and, in some cases, they have replaced the traditional schemes. This led in a more indirect way to shifts of AT towards the growing service sectors. Schemes for higher level AT are often oriented towards expanding areas such as engineering and (business) economics.

2.4 Innovation and sectoral concentration of apprentices

In the discussion up to now employment growth was seen as an indicator for the future prospects of apprenticeship training. Another important indicator for the responsiveness of AT is the extent to which innovation takes place in those sectors where the apprentices are mainly trained. Moreover, if workers with completed apprenticeship training are relatively often found in highly innovative sectors, this would be an indication for their active role in the innovation process, too.

In order to answer this question, several indicators for innovation in different sectors in the Netherlands were compared with the relative proportion of apprentices in these sectors. Innovation indicators were collected within the framework of a former NEI study (Gelderblom/de Koning/v.d. Weide 1996)[22]

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22) The sources used there are: analyses of data made available by the Organisation of Strategic Labour Market Research (OSA) and a study of Brouwer/Kleinknecht (1994) on innovation in Dutch Industry and Services.

The following indicators are used:

1. proportion of renewed products in total turnover in 1990-1992;
2. proportion of research and development in total labour volume;
3. proportion of companies by sectors which had product innovations in 1990-1992;
4. proportion of companies by sectors having applied for a patent;
5. proportion of workers by sectors who regularly use a PC or terminal during work.

A summary of the findings is given in *table 3-6*.

The most important conclusion is that fewer apprentices are found in sectors with a high rate of innovation. The correlation between the innovation indicators and the proportions of apprentices are all negative; however, this negative relationship is not statistically significant for any of the indicators.

Looking at the different indicators, the correlation between process innovations and the number of apprentices in the sector is negative. Apprenticeship

Table 3-6: Indicators of innovation and proportion of apprenticeship training in employment per sector, NL, 1990-92

Sector	Apprentices/ employment (%)	indicator 1	indicator 2	indicator 3	indicator 4	indicator 5
Repair services	14.5	-	na	na	na	0
Building and installation	8.9	-	- -	- -	0	-
Timber and furniture industry	5.0	+	- -	++	0	+
Other services	4.7	0	na	na	na	- -
Hotel and catering	4.2	- -	- -	0	- -	-
Metal and machinery industry	3.5	0	0	+	+	0
Wholesale and retail	2.6	0	- -	-	- -	-
Paper and printing industry	2.1	0	- -	++	0	+
Textiles/cloth/shoe-industry	1.7	++	- -	+	-	-
Chemical industry	1.7	+	++	++	++	0
Banking and insurance	1.6	+	- -	+	-	++
Public service and health care	1.5	0	na	na	na	-
Transport	1.4	- -	- -	- -	- -	0
Food, beverage, tobacco industry	1.0	0	-	++	-	0
Business service	0.6	0	0	+	-	+
Government	0.3	+	na	na	na	++
Culture, sport and recreation	0[a)]	+	na	na	na	+
Exploiting/renting immovable goods	0[a)]	-	0	+	-	+
Education	0[a)]	0	na	na	na	+
Oil exploitation	0[a)]	na	-	++	-	na
Public utilities	0[a)]	na	-	++	-	na
Communication	0[a)]	na	0	+	-	0
Electrotechnical industry	na[b)]	0	+	++	++	0
Correlation coefficient		-.240	-.201	-.442	-.143	-.237

Indicator 1: new and innovative products in sales; indicator 2: research and development expenditures;
indicator 3: degree of process innovations in organisations; indicator 4: degree of patent applications by organisations; indicator 5: relative use of computers by workers in organisations
A score of 100 is the average per indicator. The symbols refer to the following scores: Indicator < 50 = - -;
indicator 50 < 75 = -; indicator 75 < 125 = 0; indicator 125 < 200 = +; indicator > 200 = + +; na = not available
a) In reality it will be somewhat higher. However, absolute numbers were limited so that these sectors were not separately mentioned in the underlying sources.; b) Proportion cannot be determined exactly but will be quite limited, and at all events less than 1%
Source: Gelderblom 1997

training seems to be mostly integrated in sectors with relatively traditional production methods. The correlation with other indicators, e.g. research and development expenditure and applications for patents are less negative and rather close to zero.

Apprentices in NL are relatively often found in sectors with low innovation scores, e.g. in repair services, building and installation, hotel and catering, wholesale and retail trade. On the other hand, there are several exceptions of sectors with high apprentices numbers and rather high innovation scores, such as the timber and furniture industry and the metal and machinery industry. Although the overall relationship between AT and innovation is negative, this negative relationship is not a strong one.

All in all, however, the conclusion seems justified that apprentices in NL are not found very often in innovative sectors which are likely to offer future prospects. It would be an important task for research to extend this kind of analysis to other European countries as well.

2.5 Apprenticeship and continuing training

Another important element for future prospects is the link between AT and continuing training. In a faster changing world, life-long learning becomes a more and more important issue. Analyses have shown that participation in continuing training has a positive effect on productivity (Gelderblom/De Koning 1992; Groot 1994, cit. in Gelderblom 1997b).

Analyses for the Netherlands confirm that in general apprentices are found in sectors with relatively little investments in continuing training (Gelderblom 1997b) The most important exceptions to this situation are the metal sector, machinery and electrotechnical industry with high scores on apprenticeship as well as continuing training.

Analyses for Germany point to the same direction. They indicate that people with completed apprenticeship training have fewer opportunities for entering continuing training: Their participation in continuing training is significantly lower than in the case of higher qualified people (Tessaring 1993; Schömann/Zülke 1996).

A lack of opportunities for continuing training will be a critical factor for the future prospects of apprenticeship training in a rapidly changing world. One example in this direction is the Finnish apprenticeship system which is now open both to young people and to adults. The same is true for several Dutch sectoral apprenticeship agents which are often closely linked to sectoral organisations offering continuing training courses.

Because apprentices have already practised a combination of work and training, this group should have sufficient potential for combining learning and work at later stages in their career. The provision of courses which clearly build on the skills achieved in initial apprenticeship training and in subsequent work is a necessary precondition for tapping this potential.

2.6 Conclusions

Apprenticeship training (AT) consists of a combination of theoretical off-the-job training and practical training, often within a company. From a pedagogical viewpoint, incorporating a real working situation into the learning process has many advantages. Moreover, apprenticeship training is an attractive alternative for young people who are not inclined to continue further full-time schooling. Apprenticeship can also be seen as a bridge between school and working life, as smoothing the transition from school to work. In general, the labour market position of former apprentices in terms of finding (and keeping) a job is quite favourable. Because of this potential, the concept of AT has been extended to higher levels of education and to training for the unemployed.

Although AT has considerable potential, it is not a guarantee for bright future prospects. One of the changes taking place in the economy is that certain sectors and occupations have become more important whereas others are shrinking or growing rather slowly. Regular apprentices are often trained in sectors and occupations which have below average growth. They are found less in the expanding service sector. In Germany, the Netherlands and France the distribution of apprentices shifted somewhat towards growing sectors although this did not change the overall picture of large differences in representation over the various sectors. In other countries, the distribution over the various sectors is even more static.

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Both innovation and participation in continuing training can be seen as important conditions for future employment prospects. An analysis for the Netherlands shows that apprentices are not very often found in highly innovative sectors, although the negative correlation between the proportion of apprentices and innovation is, in statistical terms, not very strong.

Moreover, available evidence shows that there is a low level of participation in continuing training in typical AT sectors. Former apprentices thus have fewer possibilities to adapt to changes during their career if they stay in those sectors. In a rapidly changing world the skills acquired in initial education and training are no longer sufficient for an entire working life. There should be potential to improve this situation because of the specific combination of work and training. An efficient correspondence between initial apprenticeship training and continuing training would be most important in that respect.

However, this somewhat gloomy picture should be modified:

In the course of their working lives, former apprentices find their way into sectors, including the service sectors, where apprenticeship training is still under-represented. Moreover, examples show that moves to less traditional sectors are possible. The German case shows a large distribution over many occupations and sectors although there are indications of a growing mobility after training which does not always culminate in an appropriate and stable employment.

The correspondence between sectoral change and AT can also be achieved indirectly, namely by the substitution of traditional forms of AT with new types. Apprenticeship-type schemes for (potentially) unemployed young people are more often found in the service sector, although they are concentrated in certain services which require only limited skill levels. In addition, the French experience with higher level AT diploma shows that new employment fields such as marketing, consulting jobs and financial occupations can be accessed.

One important implication for decision-makers in policy and enterprises and for placement services thus would be, not only to offer training opportunities regardless of whether they are future-oriented or not. It should always be considered whether sectors and firms are located in prosperous economic areas, i.e. having a high degree of innovation and thus ensure a stable and future-oriented employment after training.

3 Transitions between education, training and work[23]

"Transition" can generally be defined as the process of moving from an initial to a final state. Since this general definition covers almost all processes of change, for instance transitions to retirement or transitions from the youth to the adult phase, a clearer definition has to be found.

The focus of the following comments is the move from education or training to the employment system. Since interim passages between short-term employment, unemployment and the participation in training schemes have since long become the norm, an even more precise definition is required: The transition process begins on leaving formal education or training and ends with access to a *stable* job.

The scope of research devoted to transitions is almost immeasurable. Since the 1970s, and in particular in the 1980s up to the present day, research has developed a number of new concepts and theoretical explanations for the fact that young people

- although on the average better educated and trained than preceding generations,
- despite substantial policy measures and funding to alleviate the transition process,
- and despite a demographic decline of younger age cohorts in most countries since the mid-1980s

are increasingly facing unemployment and precarious jobs.

3.1 The common problem: the labour market

The main driving force behind the extensive research into transition issues were and are the serious prob-

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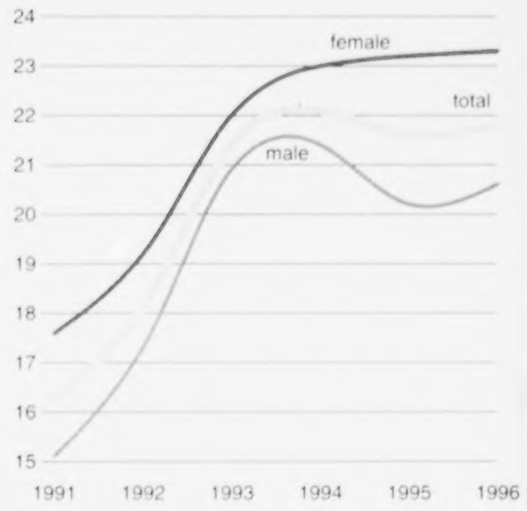
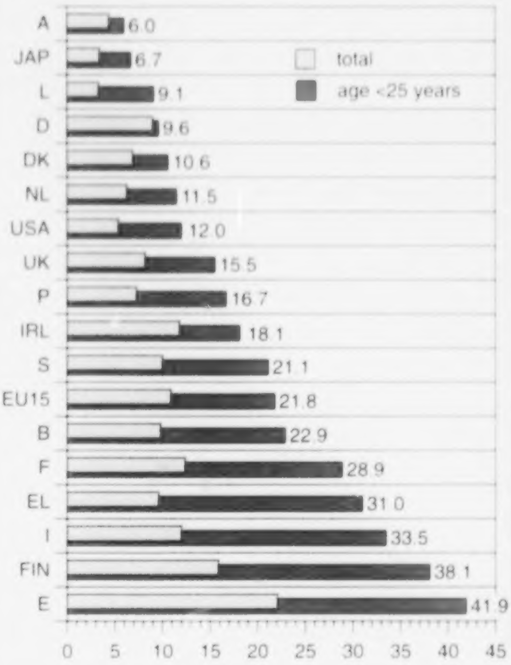
[23] *Some parts of this chapter refer to the contribution of B. C[illegible], F. G[illegible] and V. T[illegible]: "Research on transition" (1997) and to the papers of J. Vincens (1997a, b).*

Figure 3-3: Youth unemployment rates[1] 1991-1996, EUR 15 (%)



1) less than 25 years of age, annual average
Source: Eurostat: Arbeitslosigkeit in der Europäischen Union, 7/1997

Figure 3-4: Youth and total unemployment rates[1] in the EU, USA and Japan 1996, (%)



1) annual average (unemployed as % of labour force)
Source: Eurostat: Arbeitslosigkeit in der Europäischen Union, 7/1997

lems young people are facing on the labour market up to the present day. Many studies confirm this. A representative overview of the current state of European research is given in the documents presented at the workshops of the network "Transitions in Youth" (European Science Foundation 1994, 1995, 1996).

Youth unemployment

The typical illustration of the special labour market problems of young people compares the unemployment rates of young and old people *(figures 3-3 and 3-4)*.

In all countries youth unemployment rates exceed total unemployment rates to a considerable extent. In Finland, Italy and Greece youth unemployment rates are higher than 30%, in Spain even higher than 40%. The lowest unemployment rates, below 10%, for youth are found in Austria, Japan, Luxembourg and Germany.

Despite decreased pressure of demographic development since the mid-eighties in several countries youth unemployment rates rose dramatically in the first 1990s. Female youth unemployment rates exceed those of males considerably; moreover, the slight decrease observed for male youth after 1994, did not apply to young females.

However, the supposedly "objective" indicator of the youth unemployment rate must be interpreted subject to certain constraints.

The youth unemployment rate would be higher in countries which mainly have in-company or apprenticeship training in which apprentices are defined as employees: Apprentices as "employees undergoing training" are included in the calculations of the unemployment rate.[24]

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24) The simple reason is, the unemployment rate is defined as unemployed / (unemployed + employed).
If apprentices, who make up more than 50-60% particularly of younger age groups, were not counted as "employed persons", the unemployment rate would be considerably higher accordingly.

Moreover, statistically recorded youth unemployment if based on registration with employment offices, tends to under-record since school leavers do normally not have any claim to unemployment benefits and, therefore, many of them do not register as unemployed or looking for work.[25] Moreover, in many countries young people remain in their family environment after training and private "contacts" play a more important role when looking for a job than placement by the local employment office or a private employment agency.

It should furthermore be borne in mind that a growing unemployment *rate* need not necessarily correspond to an increase in *absolute* youth unemployment. Longer education periods or demographic drops can lead to larger falls in the denominator size of the rate than in the size of the numerator: The unemployment rate is on the increase despite the downward trend in the number of unemployed.

The various schemes to combat youth unemployment also have the desired or undesired knock-on effect that young people, who attend these schemes, are no longer registered as unemployed and thus "reduce the burden" on the unemployment statistics.

Precarious employment

Precarious employment is normally defined as temporary or part-time employment (cf. also Part Two). Often, too little consideration is given to the fact that these forms of employment may correspond to individual wishes. An ad hoc labour force survey of the European Commission (1995c) shows that a considerable proportion of the unemployed, in particular women, prefer part-time employment.[26] The criterion of free choice should always be taken into account.

In this context, attention should focus on whether the scale of precarious employment of young people is significantly different from that of older age groups. If this is not the case, then we can identify general labour market problems which younger and older job seekers are exposed to on the same level. "In a different society in which most of the gainfully employed would be exposed to the dictates of job insecurity, intermixing of periods of work and of no work without consideration of age or diploma, the concept of integration would lose its meaning." (Vincens 1997a, p. 12)

Despite these possible constraints, the available statistical information indicates a significant increase particularly in temporary jobs for young people (European Commission: Employment in Europe 1996):

"Just over 56% of young men and women under 25 taking up a job in 1995 after being unemployed and about the same proportion of those starting work after being in education or initial vocational training (57% of men, 54% of women) moved into a temporary job. In each case, the proportion was higher than three years previously. The increase was common to most Member States for which data are available.[27] Around three quarters of the young people taking up a temporary job after being unemployed did so because they could not find a permanent job, while only around 15% did so because the job involved a temporary period of training… In very few cases was there the formal prospect of a temporary contract becoming a permanent one after an initial period of time." (pp. 56 f.)

These developments on the labour market for young people and young adults indicate a growing general trend of firms towards achieving flexibility by means of precarious employment contracts. Since existing dismissal protection legislation and collective bargaining agreements prevent or hinder intervention of this kind in existing employment contracts, the only "means" of achieving this kind of flexibility is labour force fluctuations, i.e. new appointments. An above-average number of young people are affected by this when they enter working life.

The European Commission (Employment in Europe 1996) has confirmed this development: "A high proportion of the jobs created in 1995 were temporary rather than permanent, continuing the trend evident for the preceding three years. In 1995, the expansion of temporary work among men was responsible for all of the increase in the number of men in employment over the Union as a whole. The pattern

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25) Exception are leavers of apprenticeship training if they were defined as employed persons.

26) However, a significant proportion of part-time workers prefer full-time contracts, accordingly.

27) Exceptions with lower moves from unemployment to temporary jobs are Germany, Ireland for men and in respect of transitions from school to college: Belgium, Ireland and Germany for men and Denmark and Italy for women.

is the same for women. In 1995, temporary jobs accounted for just under half the net increase in (female) employment in the Union." (pp. 55 f.) The only exceptions where temporary jobs declined and permanent ones increased were Greece (male) and Belgium and Italy (female).

Inadequacy of employment

As already outlined in Part Two, chapter 4.3, the measurement of inappropriate employment or "over-/under-education" is rather problematic. Both subjective and objective measurement concepts have specific advantages and disadvantages. Furthermore, there is a "qualification paradoxon" in particular for newcomers to an occupation: Depending on the subject of their training, they may, on the one hand, be overqualified for the specific job requirements and, on the other, underqualified because of their insufficient job experience.

"Over-education" in the start positions on the career ladder will tend rather to be the rule and it will depend on personal performance as well as on promotion through in-company personnel measures whether and when training will lead to an appropriate and promising employment.

There is relatively little research work on the inappropriate employment of young people. This must be seen against the backdrop of national specificities in the training systems: in occupation-related training systems (as in Germany, Austria and the Netherlands) a direct comparison can be made of a learned and exercised occupation. To a large extent, this close correspondence exists even when an employment is no longer possible in the training company.

In the last few years, however, the discrepancy between training and job profiles seems to be growing:

In Germany, Austria and the Netherlands, an increasing number of former apprentices is working in other occupations or jobs than those they were trained for; this is accompanied by a higher degree of non-utilisation of their occupational skills. Occupations in manufacturing/construction and in the handicraft sector are affected more than in other sectors. Reference is made here to studies by Henninges (1991) and Bender/Dietrich (1995) for Germany, by Lassnigg (1995) for Austria and by Borghans/Smith (1997) for the Netherlands.

In countries with no extensive vocational orientation in their training systems (e.g. F, UK, IRL, E, EL) "over-education" - if not measured by self-assessment - refers rather to the vertical level of deployment within a firm. Existing studies indicate a considerable degree of over-education (cf. Part Two), even if the data, depending on the measurement concept, may vary considerably within the same country and period.

3.2 Theories and concepts

The perspectives of transition research gradually changed in the 1980s and 1990s. Initially, statistical-descriptive studies were to the fore by means of which awareness of this problem was to be heightened amongst the general public and, more particularly, in political circles. Within the framework of "planification" for instance in France, efforts were made by means of "adequationist" approaches to anticipate possible imbalances between the future number of training graduates and labour demand in order to derive areas for interventionist measures (cf. for a synthesis overview for France: Vincens 1997a; for the UK: Ashton 1994, Raffe 1994a).

In the 1980s it was recognised that the transition problem was far more complicated than originally thought. This was due not only to the pressures of economic cycles but also to the increasing diversification of manpower and social demand, a multiplication of actors and of research work devoted to transitions, and to the emergence of changing reflections and collective debates on the suitability of existing approaches and concepts (Vincens 1997a).

A gradual change took place in research perspectives: questions about the individual, socio-economic and institutional determining factors emerged. At the same time new methods and concepts were developed in order to analyse typologies, background factors and intervening variables.

It seems increasingly difficult to explain the complex transition phenomena with a single specific theory construct.

Economically oriented theories examine the link between training decisions (of individuals, companies, the state) on the one hand and cost-benefit considerations (income, productivity, growth) on the other. These considerations, particularly those of companies when recruiting skilled staff, extend not only to formal education and training but also to the overall set of skills required for the job. Special importance is attributed here to work experience.

Further elements in the economic theory such as job search, insider-outsider phenomena and models of job rationing (cf. for an overview: Vincens 1997b) in principle assume that in the periods of stagnant or low additional demand for labour, people with work experience have an information and production edge over newcomers to the occupation. How employers decide in respect of the trade-off between lower wages (for newcomers) and higher productivity (of experienced workers) depends on the price elasticity of labour demand.

> This macro-economic view has a dichotomic character: either transition is completed (employment) or not (unemployment). This view does not consider the emergence process of a transition decision (e.g. through socialisation, the influence of the environment and institutions, cf. chapter 1), and the incompleteness of information on labour markets or the social organisation of transition.

Sociological theories view transition as a socially constructed process in which a variety of players, agents and institutions are involved. For the individual, entry to working life marks the beginning of a period of uncertainty and is linked with learning new social roles, creating a new awareness, the fabrication of new symbolic universes and confrontation with new experiences, actors, environments and fields of social action (Vincens 1997a).

These various aspects are addressed in research studies, each with a specific orientation.

- Studies, which examine the "second socialisation" (after the first in youth), do not, given the transition problems in this second socialisation, observe a normal socialisation process carrying on from the first socialisation on the path to becoming an adult. They state a specific and discontinuous "socialisation" which is characterised by unemployment and the realities of the labour market.

  This leads to a break with the subjective conditions of the preceding socialisation period and to altered identity and awareness (Demazière/Dubar et al. 1994). The theory referred to is part of a comprehensive hypothesis about the development of social and occupational awareness (Dubar 1991).

- Other studies focus on the different features of the labour market and the institutions and players involved there. This includes studies which, on the basis of the theory of labour market segmentation (Doeringer/Piore 1971), give priority to the existence of internal and external labour markets with their specific conditions for recruitment, promotion and skill requirements.

  When developed further, they consider the influence of the economic environment and the regional and local labour markets on transition opportunities. Here, the emphasis is on socio-economic trajectories and local forms of the organisation of transitions (Demazière/Dubar et al. 1994). This research orientation concentrates on the transition process as the consequence of the transformation of employment conditions, social forms of work and on the modes of transition between social status (Rose 1994).

  Other approaches stress the role of intermediaries within the process of bringing together job seekers and employers (Baron et al. 1994).

- In French studies, in particular, the emphasis is on the organisation of occupational transition (l'Organisation de la Transition Professionnelle, OTP). OTP is defined as "the overall social forms used to place people in employment..., access to an employment contract..., passage to activity... or registration as a salaried employee" (Rose 1984).

  In this context, the hypothesis is advanced that institutions play a structuring role in respect of external markets in the same way that companies structure their internal markets. The OTP issue implicitly raises the question of the link between the construction of internal markets and the social management of external markets. In this context it was part of the overall reflection of changes in the salaried employment situation undertaken by and in conjunction with the French school of regulation (cf. for further discussion: Clasquin/Gérardin/Toresse 1997).

> Both the economic and the sociologically oriented theories share the fact that they attribute a key role to the labour market and the conditions prevailing there when it comes to shaping the transition process and that the activities of the individual are inseparable from his/her links to other players or economic agents.

The transition process itself may be defined *objectively* (e.g. by the researcher) or *subjectively* by the individual himself. This applies both to the commencement and completion of transition. Neither is clearly definable. Consideration of the commencement of transition would be incomplete unless coupled with analysis of the social conditions of previous training, which shapes later experience on the labour market (Laflamme 1993). When defining the target condition, subjective views about when this is achieved and when the transition process has been completed are to be taken into account as well as objective ones, e.g. permanent contracts (Trottier/Laforce/Cloutier 1996; Dubar 1991, 1993).

3.3 Methodologies in transition research

Approaches

A comprehensive survey of transition research approaches is difficult for various reasons.

Given the obvious difficulties in explaining the transition problem in descriptive or monocausal terms only, numerous theoretical and conceptual approaches were developed which, however, differ in respect of their orientation, limits, methodology and their reliance on national specificities.

Furthermore, the subject of transition research becomes increasingly unclear. For instance, the question is when "transitions" to employment are actually completed. As mentioned above, there is another, even more fundamental question as to whether the transition problems after training should perhaps be viewed against the backdrop of increasing instability and destructuring of what so far were standardised life patterns which affect not only young people but also, to an increasing degree, older people (Vincens 1997a).

The complex nature of the transition process and the shortcomings of rather descriptive methods so far – particularly in the 1980s – prompted a series of surveys, analytical methods and empirical information systems which examined biographical paths in a long-term observation. Here are some examples:

- follow-up surveys of graduates at specific intervals after completion of education or training (for an overview of the research approaches cf. Ashton 1994);
- longitudinal surveys of cohorts[28] (for a discussion particularly of the analysis of cohort, age and period effects cf. Mason/Fienberg 1985; Bowman 1987; Espinasse/Giret 1997a, b);
- panel enquiries for identical persons in the course of time (for a summary on German panels and analysis cf. Schwarze/Buttler/Wagner 1994);
- life biographies of individuals with a set of qualitative questions concerning, amongst other things, expectations, preferences, subjective and objective feelings, motives, family situation etc. (for a discussion cf. Planas et al. 1995; Dubar/Gadea/Rolle 1996);
- econometric analyses of the influence of different variables on the transition process;
- merging of different statistical and empirical databases in order to gain an overall representative picture or database on transitions and flows (cf. as examples the IAB educational accounting system "BGR"[29]: Tessaring et al. 1991 and the quality frame "IDARESA"[30] for the merging of international data, also on transitions: Lamb et al. 1996).

These methodologies demonstrate the move away from the previous "adequative approaches" which were based on estimations of future (new) supply of labour (by qualification levels or occupations) compared to the labour force demand (cf. Part Two). They have their specific objectives and implications:

> Cohort or longitudinal studies may serve for labour market policy measures in indicating the flows of people through education and labour market. Biographical enquiries enable to establish specific measures targeted to the different situation of certain groups of persons.

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[28] A cohort is defined as a group of individuals with the same starting point. A starting point could be year of birth or the beginning or completion of training.

[29] Bildungsgesamtrechnung

[30] Integrated Documentation And Retrieval Environment for Statistical Aggregates

Table 3-7: Selected longitudinal surveys in Europe

Description / Country	Start	Frequency
Youth Cohort Study (England and Wales)	1985	1 - 2 years
Scottish Young People's Survey		
- school leavers survey	1971	2 years
- cohort study	1985	2 years
Scottish School Leavers Destination Survey	1993	1 year
National Observatory on Entry into Working Life (EVA), France		
- decentralised survey	1993	1 year
- national retrospective survey	1976	4 years
- panel study	1987	3-4 years
School Leavers Survey (Ireland)	1989	1 year
Registration of output and Labour Market Position of School Leavers (Netherlands)	1989	1 year
German Socio-economic Panel		
- West Germany	1984	1 year
- East Germany	1990	1 year

Databases

To an increasing number EU Member States established regular longitudinal reporting systems and panels in the past 10-20 years. Without claiming to be complete, some of these surveys are listed in *table 3-7.*[31]

3.4 Diversity of transitions in a cross-cultural context

The analysis of the organisation and process of transitions should consider the relationships between social institutions, transition sequences and placement in the labour market. Cross-cultural transition research should be contextual in at least two directions (Heinz 1994):

- it should examine the social and economic conditions that stabilise or change life course transitions and their consequences in the labour market;
- research should take into account the development of regional employment opportunities as well as of the sectoral structures of the economy;
- we should add that they also have to take account of the different design of national VET systems and the specific qualifications, skills and competencies acquired.

From the wealth of comparative studies on transition research, we will focus on two since they address the transition problematic for a number of countries.

Occupational and internal labour markets

Heinz (1994) distinguishes between two approaches used in transition research in England, Germany, France, the USA and Canada. The first one is the *life course approach* considering the socio-cultural circumstances and their interaction with life events and social positions of different cohorts. The second one is the *biographical approach* which also takes into account individuals' experiences and decisions.

Principles common to both approaches are (George 1993):

- the intersection of social and historical events and conditions with personal biography;
- the notion that socially recognised sequences of transition (status changes) occur in a certain timeframe and are embedded in long-term patterns of life course stability and change;
- the understanding that both approaches require a longitudinal design in order to cover the dynamics of transition.

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[31] The list is partly based on Raffe (1994). CEDEFOP would appreciate information on additional surveys (contact: Manfred Tessaring).

The organisation of the transition process is different in the four countries considered. In Germany (as well as in Austria, we should note) and France institutions and agencies play an important role in controlling the entries, the duration and the exits of the transition process.

The difference between Germany and France is the involvement of employers in the transition process: In Germany employers are already involved in the process of (apprenticeship) training. This tends to lead to a more stable transition to working life and thus greater standardisation of life course events.

The predominantly state-run education and training in France leaves a "responsibility gap" between the state and employers: in principle, responsibility of the State ends with the completion of an education and training course, and the involvement of employers starts with the recruitment procedure ("insertion"). The process in between, the transition process itself, thus involves precarious phases of switching between unemployment, unstable jobs and training schemes.

The situation in the USA and the UK concerning the organisation of transition is very heterogeneous, and no single agency-structure model could be identified (Heinz 1994).

Against this background, Heinz distinguishes between two major labour market segments, the occupational labour market[32] and the internal labour market. A third segment would be the casual labour market where skill requirements are low and job security is minimal (Ashton 1994).

In internal labour markets such as in Canada, the USA and France, preparation for work is done at schools and through on-the-job training. Occupational labour markets (such as in A, D, NL) are characterised by an institutional network of organised vocational socialisation (via apprenticeship). The standardised sequences of skill acquisition are publicly regulated and their quality is controlled.

The British situation is somewhat different. Young people in training are treated as workers and the social role of apprenticeship is being dismantled. "The British labour market has been moving unevenly from occupational to industrial structures, and from apprenticeship to job training, thereby eroding the institutions needed for government training policy to work" (Ryan 1991, p.12).

Thus, in the UK, training is seen by firms as an attainment of relevant (specific) skills and experiences rather than a process of socialisation for work. As a consequence there is a separation between youth and adult labour markets. There is a group of young adults who never experienced full-time employment but move between governmental schemes, casual employment and unemployment.

At the same time "decision-making case studies" for employers show the trend to a reduction of unskilled and semi-skilled jobs, a decline of employment in manufacturing and a growth of service sectors with stable part-time work and a growth of administrative and professional jobs. All these trends lead to a shrinking labour market for early and low-skilled school leavers.

Similar considerations and findings are shown in other comparative studies on transitions in Britain and Germany (Bynner/Roberts 1992; Evans/Heinz 1994; Roberts/Clark/Wallace 1994). A comparison of the transitions of medium-level positions in France and Germany (Drexel 1993) indicates, on the one hand, that there are specific national logics which have constituted a particular interdependence of education, training, employment and career. On the other hand, however, transition systems for this group of qualifications have come under pressure. Companies can establish training routes that neutralise or even revise the impact of public education and training.

In a summary, Heinz (1994) states that the difficulty of transition systems lies in the fact that they should be able to integrate deprived social groups and to attract privileged social groups at the same time. Changes in the transition system have to be accompanied by efforts to restructure educational and labour market systems. The employers must be convinced that a stable transition system which combines general education with work-related training will pay in the longer run. There are very few real alternatives to a flexible combination of general education and socialisation for work.

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[32] Note that the occupational labour market is not to be equated with the external labour market, as discussed in Part Two. It refers to a labour market shaped by occupational categories.

The internal route (England, France) presupposes vocational enrichment of school curricula, and firms will only pay for job-specific training. This alternative reduces the flexibility of the workforce. Thus, governments and employers should provide clear and permeable routes for progress from one VET level to another. This will support young people's decisions, give transparency to their movements from education to the labour market and also provide options for a revision of earlier decisions (Heinz 1994).

Organisational and qualificational spaces

In a broad international comparative survey on transitions Müller/Shavit (1997a, b) refer to the theoretical background of the links between educational qualifications and labour force outcomes developed by Maurice/Sellier/Silvestre (1982). This early comparative study analysed the work organisation, job recruitment and mobility patterns in France and Germany.

As a result, Germany was defined as a "qualificational space" where vocational qualifications are used by employers to organise jobs and to allocate persons. Workers can easily move between firms and are less likely to experience a devaluation of their vocational skills.

France was characterised as an "organisational space" where education is less relevant for work and vocational qualifications are mainly obtained on the job. Because these are specific skills not often recognised by other employers, the association between education and jobs is looser, and firms adapt their training to the organisation of work. Similar situations have been observed in Ireland and the USA.

Cross-national similarities

In summary the comparisons show that despite the vast differences between educational and vocational systems, they seem to exhibit similar patterns. This supports approaches which predict growing similarities between countries (Müller/Shavit 1997b).

In this context, there are two basic approaches which predict growing similarities between countries:

The *neo-institutionalist approach* (e.g. Meyer/Ramirez/Soysal 1992) expects that the essential institutional aspects of educational systems are growing increasingly similar across countries. Thus, for example, mass compulsory education becomes universal, and school systems adopt similar curricula. The shape and content of educational institutions are closely linked to the rise of standardised models of the society and thus of education. These modern models of society and education and their interrelation are similar around the world (Benavot et al. 1991). Thus the role of educational qualifications in determining occupational attainment will tend to converge.

The *industrialisation hypothesis* states that general societal development is a result of rationalisation of production, international competition and the operation of multinational companies. As a result, societies are expected to move towards a common pattern of occupational stratification (e.g. Treiman 1970).

Thus educational and training attainment will become increasingly dependent on qualifications. In respect of the effect of education on occupational prestige for example, the variation among countries is strongly related to the level of industrialisation (Treiman, Yip 1989). The industrialisation hypothesis thus anticipates a similar magnitude of association between education and labour market outcomes among societies with comparable levels of industrialisation.

Results of the comparative study

In their empirical analysis of transitions in 13 countries[33] the authors take the convergence hypothesis as the zero hypothesis[34] to test the arguments of qualificational and organisational spaces discussed at the beginning.

There are several factors within the qualificational and organisational spaces that influence the transition process. These factors have partly been developed by Allmendinger (1989) and refer to:

- the degree of specificity of skill contents;
- the degree of standardisation of educational/vocational training provisions and certificates;
- the degree of stratification of education and training routes.

The empirical work has been carried out by national researchers on the basis of a common research design. Several hypotheses concerning the three dimen-

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33) The countries included are: AUS, GB, F, D, IRL, ISR, I, JAP, NL, S, CH, TAI, USA.

34) Which would mean that deviations between countries are only random and not systematic.

Table 3-8: Classification of countries concerning the correspondence of education, training and the labour market

Standardisation	Stratification		
	Low	Medium	High
High	__(1) IRL JAP__ _S*_	(2) _F* I* ISR* TAI*_	(3) D** CH** NL**
Low	__(4) AUS* GB* USA*__	(5)	(6)

Note: asterisks indicate the degree of occupational specificity of vocational education:
no asterisk = low specificity; 1 asterisk = medium specificity; 2 asterisks = high specificity
underlined: qualificational space; **bold:** organisational space; *italic:* mixed spaces
Source: Muller/Shavit 1997, Table 1.1a

sions of the transition success were tested. The empirical analysis focuses on the entry point into the labour market or equivalent indicators, depending on statistical information available in the different countries.

The analysis consists of core and facultative components, the core component including regression analyses respectively multi-nominal logit equations. Educational and training levels, as the independent variable, used the CASMIN scheme with seven levels ranging from social minimum of education to academic/university education. Dependent variables are occupation prestige scales or scales of socio-economic status, and EGP scheme of workers' classes ranging from higher grade professionals to unskilled workers, and the labour force status. Sources were national and OECD data.

As a result of the national studies the countries under consideration could be assigned to the three dimensions as shown in *table 3-8*. The countries identified as "qualificational spaces" are D, CH and NL (similar A although not included in the analysis), and as "organisational spaces" are IRL, JAP, AUS, GB and the USA. Mixed organisational and qualificational spaces are S, F, I, ISR and TAI.

> The authors conclude that educational qualifications will enhance work in prestigious jobs by yielding higher marginal returns and social placement, by increasing the probability of employment in skilled jobs and lower unemployment risks. These correlations were - to varying degrees - found in all 13 countries.

Particularly in the case of vocational education and qualifications, there were some differences between these countries, however. Vocational qualifications had the highest prestige in D, CH and NL and the lowest in GB, JAP and the USA. Furthermore, vocational education increases the odds of becoming a skilled worker rather than an unskilled one only in D, CH, ISR and AUS; lower probabilities were found in GB, S and IRL.

What is important for the problem of transition is the question whether vocational specificity leads to a better association between qualification and the labour market. The empirical results reveal that vocational education, too, increases the odds of entering the labour market in a skilled blue-collar occupation rather than in an unskilled one. On the whole, this was confirmed for all countries.

The extent to which this happens depends on the occupational specificity in each country, however. In those countries without institutions offering specific VET provision, the skilled and unskilled working classes are generally much less distinct by education than those with a marked vocational component in their education system.

In stratified systems with a high specificity of training, the credentials conferred are valuable and can enhance occupational opportunities by reducing the risk of dropping to the unskilled working classes. In addition, systems with differentiated vocational education improve the odds of entry into the service class. Countries with less differentiated systems (GB, JAP, S, USA) only marginally increase the odds of entering a service class job. Similar results were obtained for occupational prestige and for class positioning.

3.5 Conclusions

Although there are now innumerable research studies on the problems of the transition from training to employment, several questions remain unanswered.

Why is this transition – despite the high qualifications of young people and intensive political measures in many countries – still accompanied by a high level of youth unemployment and insecure employment? Do these problems reflect a growing de-standardisation of life and work patterns and uncertainty on the overall labour market for older workers, too? Which training systems are more successful in handling this transition and why?

The differences in transition problems in EU countries can be attributed to differences in the organisation of labour markets. Two types are emerging in particular: occupational and internal labour markets.

Occupational labour markets are characterised by an institutionalised network of vocational responsibilities and socialisation and by standardised sequences between skill acquisition and utilisation. The transition is largely regulated here, although not necessarily in training companies but in the occupation learned.

On-the-job training in specific skills prevails on internal labour markets. Graduates from vocational schools are not so socialised in terms of an occupation and compete with other people on the external labour market.

Behind this characterisation of the different labour markets is the question of the degree of specificity of skill contents, the degree of standardisation of training certificates and the degree of stratification of education and training routes and, last but not least, the prestige, legitimacy and labour market relevance of vocational qualifications. There are no general solutions for transition. Even in countries with highly developed occupational labour markets (e.g. apprentice training) transition to occupations which are appropriate to training is tending to decline.

All in all, there seems to be an increasing information problem for adequate political measures in this area. In order to overcome this problem it is necessary to undertake more extensive flow analyses either as longitudinal/cohort studies or as life biographies.

Both serve different goals:

- Measures for political intervention should take into account the individual environment and attitudes of young people, e.g. family background, personal characteristics, intentions/expectations, values, etc. Information of this kind can best be accessed by means of life biographies or panel enquiries.
- Cohort or aggregate flow analyses are better suited to the purposes of political planning and steering of education and training systems and for the observation of the direct or indirect effects of measures. They should include a variety of transitions, education and training routes and refer to longer periods. They can, for example, identify the extent to which growing youth unemployment leads to more time being spent in the education system or the consequences which greater permeability (e.g. access to higher education) has for vocational training.

From the European angle, longitudinal studies are to be encouraged whereby core components should be common central biographic standards and methods whereas facultative components take into account a specific country or regional situation.

4 Objectives and realisation of continuing vocational training[35]

4.1 Socio-economic background

European societies are in progress to change their socio-economic structures. Most of them have obtained the status of advanced industrial or even "post-industrial" societies characterised by a paradigmatic change from material production to knowledge and science. Within the knowledge-based and "learning societies", education and in particular vocational education and training and Continuing Vocational Training (CVT) are gaining in significance.

The growing importance of CVT is not only visible measured by the money spent on it, but also regarding the degree of CVT participation. Although CVT systems in Europe are rather heterogeneous, the central common issue is the belief that education and – concerning work and the economy – VET and CVT are the most appropriate strategies to cope with the challenges on the way to advanced industrial societies and with the long-term consequences of the age-

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35) *This chapter summarises the contribution of D. Musk and A. Lassnigg (1997b): Objectives, realisation and organisation of continuing vocational education and training.*

ing of European populations. The acceleration of learning processes with regard to labour markets points directly to the central function of CVT as a flexible instrument of adaptation to the changing demands.

Conceptions such as "lifelong learning" (UNESCO 1976), "recurrent education" (OECD 1973, 1978) and – related to the European context – "alternance" (European Commission 1979, 1991a; CEDEFOP 1982, 1984) presuppose the necessity of vocational, labour-market related learning during the whole working life of individuals.

As mentioned several times, the persistence of unemployment is one of the most serious problems in Europe and there is little hope that in the short run it may be overcome. The fight of European societies against unemployment since the seventies has been one of the most important motivations for European policies. VET and CVT are directly involved, in particular with regard to long-term unemployment and the transition problems of youth to the labour market. Considering the unsatisfactory results of the fight against unemployment (Lipsmeier/Münk 1994), however, CVT serves in some cases (in particular publicly financed further training or re-training) also as an instrument to engage unemployed people for a certain time.

During the last decade European governments have followed a labour market policy by providing increasing financial support for CVT measures. In Germany, for example "the pressures of the employment system even caused a reversal from preventive labour market policy to a curative one" (Münk/Lipsmeier 1997a, p. 111). The White Papers of the European Commission (1993a, 1995a) also point to the insufficient development of CVT systems, inequalities in access to CVT and limited opportunities for employees in SMEs.

Relating to the 1995 White Paper, the Study Group on Education and Training concludes:

"If lifelong learning becomes an aim fully adopted by governments and takes on tangible form, the coming years will become a benchmark in the history of education. ... Many analyses of contemporary and future social and cultural models underline the need for this wide, all-encompassing view of education as a developing, lifelong process. Modern society will be a learning society and Europe will have a dominant place in that society if this educational concept is fully developed." (European Commission 1997d, p. 49)

4.2 Objectives and functions of CVT in Europe

Objectives of CVT

Facing the challenges of the labour markets and of social and economic change common to all EU countries, the general objectives and strategies towards CVT and its role both in the world of work and outside are rather similar.

The objectives of CVT are:

☐ to promote personal development, self-confidence, identification and self realisation;
☐ to raise economic efficiency, productivity and profitability, individual earnings and, eventually, national income;
☐ to prevent the obsolescence of skills;
☐ to alleviate the specific problems of high-risk groups such as poorly educated, women, older employees, workers in precarious jobs, school leavers;
☐ to meet the demand of social and democratic development within the European societies;
☐ to enhance cultural participation and social competence.

Among these objectives of CVT very often those related to the labour market are dominant. As the OECD states, "many governments give priority to the labour market functions of CET" (OECD 1995f, p. 142[36]).

Seen from a pedagogical and social angle however, the objectives of CVT are more far-reaching.

CVT is a question of social policy in "promoting winners and compensating losers". Not only highly skilled workers should be given the chance to adapt, refresh or enlarge their skills, but also disadvantaged people should be supported to enter into the labour market, in offering "labour market admission tickets". The avoidance of *social inequality* implies easy

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36) CET: Continuing Education and Training.

access to CVT and providing equal opportunities within all fields of education and training.

CVT is a learning process, which must impart or build upon a broad based knowledge. "General education must provide preparation for vocational skills, and vocational training must continue to develop the basic competencies provided by general education" (European Commission 1997d, p. 28) and thus permit a clear occupational identification and career.

CVT is an important medium for the development of social and extra-functional qualifications. The restructuring of whole business processes in firms also affects working conditions. CVT should aim at "teaching people to work as part of a group (*inter alia* by using information technologies)... This also demands progress to identify the skills acquired through group work, to accredit group work in the same way as individual work, and to introduce and gain acceptance for the unambiguous evaluation of individual behavioural skills, in particular communication skills, leadership and problem-solving" (ibid., p. 28).

Similarly, the White Paper of the European Commission (1995a, p. 31) emphasises the central role of "social aptitudes" concerning "inter-personal skills, i.e. behaviour at work and a whole range of skills corresponding to the level of responsibility held, such as the ability to co-operate and work as a part of a team, creativeness and the quest for quality. Full mastery of these skills can be acquired only in a working environment and therefore mainly on the job".

CVT is a medium to prepare the skills needed in future, to reach greater flexibility and adaptability. It is undoubted that CVT is one of the most important instruments to reach a high degree of correspondence between the actual needs of jobs and vocational qualifications. At the same time CVT is an appropriate instrument to adapt in a very short time to new qualifications needed in the labour market.

Actors

Actors to attain these objectives of CVT are governments, enterprises, social partners and individuals.

Governmental policy focuses primarily on disadvantaged people by offering them a first or second chance of qualification: Part of these activities are, on the European level, several programmes of the European Commission launched in the context of the Leonardo da Vinci Programme. Especially relevant in this context is the support for CVT by the European Social Fund. Mainly the Mediterranean Member States, but also the eastern part of Germany have benefited from this fund, which promotes in particular disadvantaged and high-risk target groups.

Enterprises promote CVT mainly for their own workers in order to adapt to new technologies or working environments, to improve economic productivity and competitiveness and to promote the degree of innovation of the enterprise.

Individuals are interested in improving their occupational prospects by CVT; or they try to compensate for lacking qualifications in order to (re-)enter the labour market. Employed and qualified people are interested in adapting and upgrading skills.

Main functions of CVT

CVT has to fulfil important functions concerning the allocation and promotion of individuals in the labour markets. In their analysis of the FORCE programme, Brandsma/Kessler/Münch (1995) have outlined six main functions of CVT linked to different target groups and labour market strategies:

- *"adaptation"* to the changing challenges of labour markets, e.g. to new technologies;
- *"innovation"* by upgrading skills by means of CVT, mostly enterprise activities;
- *"promotion"* by upgrading skills for vocational career, mostly for qualified and employed people;
- *"catching up"* in case of lacking adequate qualifications; these are often measures for target groups or to provide basic qualifications;
- *"curative or compensatory function"* aimed at a re-orientation of (obsolete or not utilised) skills or the provision of lacking qualifications within the context of social and labour market policies;
- *"preventive or cumulative function"* for individuals, who want to acquire skills they probably need in future in order to stay employed or to upgrade their vocational position.

Table 3-9: Functions and responsibilities for CVT in EU

Responsibility for for CVT	compensatory CVT	cumulative CVT
Enterprises	UK; S	A, D, NL
Government or EU* (ESF; EFRE)	B, F, FIN, IRL*, E*, I*, EL*, P*	DK, L

Source: Puvogel 1996 and additions by Münk/Lipsmeier 1997

Preventive or cumulative CVT which aims at reducing the risk of unemployment should be a measure taken by governments. Reality has shown, however, a decline in governmental interventions in this field since the early 1980s: the German situation for example demonstrates, that CVT measures in the framework of the AFG (Employment Promotion Act) have meanwhile become almost exclusively a curative/compensatory character. This situation is similar throughout Europe (Münk/Lipsmeier 1997).

Table 3-9 classifies the EU Member States by CVT functions and responsible bodies. Some restrictions should be made, however: Due to recent structural changes in Belgium and Luxembourg data are lacking. Some other countries (IRL, E, I, EL, P) get substantial financial aid from EU funds (ESF, EFRE), which is in a certain way comparable to the role and tasks of government policy.

It is rather difficult to present a detailed picture of the different forms of CVT offered within the Member States. This depends not only on the fact, that data are not consistent and complete, but also on that there is no consensual definition of "CVT". Brandsma/Kessler/Münch (1995) state that for the Flemish community of B, EL, I, NL, E and the UK a definition of CVT is missing entirely. (National definitions of CVT have been compiled by CEDEFOP (1996a); some of them were presented in the introduction to this report.)

Therefore it makes sense to use a broad definition of CVT in order to cover the most important national-specificities. The OECD defines "CET - Continuing Education and Training - as all kinds of general and job related education and training organised, financed or sponsored by authorities, provided by employers or self financed. Included in the definition are training courses on the job as well as off the job, and courses for adults leading to an educational qualification." (OECD 1995f, p. 39).

Forms of CVT

In its traditional form, the transfer of vocational knowledge by CVT is job-related and includes mostly short-term courses of instruction. These may be offered within the firm or on its behalf. External courses are provided by institutions, persons or other enterprises on the free market.

According to the CVT survey (CVTS) carried out in 1994 (European Commission/Eurostat, forthcoming) most enterprises in Europe decide for external courses (67%) rather than for internal ones (40%).[37] Another important form is CVT within the work situation which is performed by 66% of European firms.

Based on German experience the usual form of on-the-job CVT is coaching by senior workers, followed by training of new employees and by training required through the introduction of new technologies (Schmidt 1996). Although there are several forms of work-related transfer of vocational knowledge, for example quality circles or exchange programmes with other enterprises, in most Member States these forms are not as important as in Germany.

According to the CVTS, self-learning as an alternative form of organised CVT has the lowest share (22%) among all forms of CVT. However, this figure hides important tendencies of vocational learning. For enterprises, self-learning CVT reduces costs; for the individuals, it is connected with a higher degree of autonomy concerning personal time schedule and CVT contents. In addition, self directed learning is a decentralised form of learning with a strong upward tendency (cf. for an overview on the current discussion in Europe: Straka 1997b). And finally, technological progress and in particular new multimedia opportunities are likely to lead to the increasing importance of this form of learning – the same may hold true for Open Distance Learning (ODL).

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[37] Internal, external and on-the-job CVT add up to more than 100% since enterprises mostly use several forms.

The European Commission adds, that in Norway, the UK, the Flemish community of Belgium and in Finland learning supported by information technologies and ODL are among the most discussed issues at present.

4.3 Structures of CVT systems in Europe

The European tendency of vocational education towards a "pattern of complex mixture" seems to become increasingly a reality.

A discussion of the general structure, organisation and tasks of the CVT systems should consider:

(1) whether the national system of initial vocational training is highly professionalised or has a more general character, and

(2) how initial training is organised in professionalised VET systems.

The design of these two basic models - dominance of general education or of vocational training with its three alternatives (apprenticeship-type, school based or training on the job) - has serious effects on the status quo of the labour market, the degree of governmental steering, the financing, certification and standardisation of certificates and the linkage between initial VET and CVT.

CVT becomes important at the beginning as well as during later phases of working life. In both cases CVT is an important instrument to promote vocational qualifications and to make and keep people "employable". In this context, it is important to know in which way initial vocational education and training was acquired.

The following analysis tries to outline the impacts on CVT of the two basic models: Firstly, predominant *vocational systems*[38], and secondly systems with a predominant *general education* on secondary level.[39]

Systems of vocational education at secondary level

Apprenticeship-type programs

CVT in apprenticeship-type systems (Germany, Austria and with restrictions Denmark and the Netherlands) mainly has a cumulative or preventive character aiming at the enlargement or renewal of existing vocational knowledge (e.g. in Germany: further training for "Meister" or "Techniker" diplomas) achieved mainly during the previous apprenticeship training and by work experience. Apprenticeship based systems of initial vocational training normally are highly standardised and stratified, and the qualifications acquired and certified are rather occupation-specific than firm-specific.

In these apprenticeship systems CVT may be offered by enterprises as well as by the government, but is normally market-oriented. This has direct effects concerning CVT funding which is usually financed by the enterprises and/or the individuals.

The close relationship to the demands and conditions of work are underlined by Streeck (1992):

> *"A very important lesson from the German system and ... also from the Japanese system is to recognise the extreme importance for learning of the work process and experimental knowledge. This is especially crucial when working with technology, such as microelectronics, which is undefined and where work and experimentation are merged. Such technologies are defined by their application. Where products and manufacturing processes change very fast, workers always must improvise. In improvising they have to rely on experimental skills which must be emphasised in training and can only be acquired at the workplace." (p. 42).*

CVT in these systems is a very flexible and fast instrument to adapt qualification levels to the demands of the enterprises. The role of government is restricted to labour market policy measures, e. g. for the unemployed and disadvantaged people. Hence governmental support of CVT tends to be defensive

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38) With more than 50% of young people in vocational education on secondary level, included apprenticeship, training on the job and school based models.

39) More than 50% of young people in general education.

(curative/compensatory), whereas private and enterprise-funded CVT tends to be offensive (cumulative/preventive).

Mainly school-based programmes

In predominantly (vocational) school based systems the links with occupation and labour market is looser. The main objective of CVT is to adjust or compensate for deficits of practice experience. In such systems CVT very often has a compensatory function and thus plays an important role for the enterprises and for the process of transition. It is often focused much more on disadvantaged, unemployed people than in apprenticeship systems.

Many governments in Europe follow this strategy (for example France and Ireland), although experience has proved, that the effects of a defensive labour market policy via CVT are weak or even antithetical (see for example the analysis of Connell/McGinnity 1997 for the situation in Ireland). The Finnish labour-market training is also lacking some efficiency, considering the dead-weight and substitution effects and the relatively small improvement of participant's labour market integration (Räisäinen 1997).

Work-related CVT programmes

In systems dominated by training on-the-job (e.g. UK) CVT measures are of compensatory character and are organised and offered by enterprises. Since enterprises qualify their employees for those skills they actually need, training on-the-job is closely connected with specific job requirements. Because of lacking broad-based qualifications it remains open for discussion whether workers develop a "work socialisation" as is more the case in occupation-related apprenticeship systems. Governmental intervention and steering in work-related systems is more restricted to disadvantaged people.

One advantage of on-the-job training programmes is their high degree of flexibility. On the other hand, however, the numerous CVT offers (e.g. in the UK) lead to a high degree of intransparency. For this reason the UK tries to structure and standardise the offered measures of vocational qualification by creating modules (van Cleve/Kell 1996).

CVT modules may be able to improve the degree of decentralisation, flexibility and also the capability to adapt qualifications to the actual demands of the job (Reuling 1996). A negative side is that the quality control and certification of CVT measures is very difficult, that training may remain incomplete and that a consistent modularisation only works in a superior framework, which organises the variety of different modules.

The UK education policy has tried to solve this problem by establishing the National Council for Vocational Qualifications (NCVQ). One important aim is to create "competency statements" which should make acquired vocational skills comparable. A similar tendency is found in France and most of the Member States in the southern part of Europe although their reforms are rather different and heterogeneous (Puvogel 1996). A higher degree of transparency is attractive both for enterprises in gaining better information about the qualifications offered, and for individuals, because they may better plan their vocational mobility and career.

The trends towards modularisation and at the same time towards new forms of accreditation and certification of qualifications can be regarded as an important instrument to give disadvantaged people a first or second chance to acquire a basic vocational qualification. The measure is addressed to those who never had the chance to attain a "traditional paper qualification" (European Commission 1995a). This concerns the field of CVT in so far directly, as the strategy of accreditation of prior learning and the post-qualification is closely connected with an enlargement of the importance of CVT and of work-experienced based forms of learning (Sellin 1996).

Finally, strategies of modularisation are often accompanied by a more or less high degree of deregulation and decentralisation. The analysis of the Guildford Educational Service confirms this tendency referring to recent reforms in Ireland, France, Portugal, Sweden, and Italy (Guildford 1995) (cf. also Part One).

Systems of general education at secondary level

If it holds true, that there is a close linkage between VET and the success on the labour market, the lack of job-related vocational qualification is higher in those Member States where general education at secondary level is predominant. The most crucial problem in these countries is the phase of transition into working life, because school-leavers have deficits concerning practical and job related skills. According to the OECD analysis (1995f), Portugal, Greece, Ireland and Spain fall in this category.

CVT in these countries has normally a strong curative or compensatory function. The divergence between the demands of the labour market and vocational qualifications of school leavers is much bigger than in the systems of vocational education and training described above. This is also confirmed by the above average level of youth unemployment.

But there are also advantages of systems with general education. First, from the pedagogical point of view, labour market oriented approaches "disregard the effect of social structure on individual effort and opportunity, concentrate on the exchange value of education rather than on its intrinsic value, and see the education system as a labour force service rather than as a producer and modifier of values, cultural and social as well as economic" (Jonathan 1994, p. 6700). Secondly, Jonathan underlines that "the available empirical evidence thus suggests that the macroeconomic arguments for vocational education and training during the period of compulsory education, as a prerequisite for national economic health, are far from compelling" although such arguments are often formulated "by politicians, policy makers and the media, with cross cultural comparisons offered to lend them support" (ibid.).

But one should not ignore that those countries dominated by general education are confronted with serious problems on the labour market. With the increasing number of unemployed it seems nearly inevitable that governmental intervention is needed concerning labour market programmes and CVT.

This results in additional pressures on tight public budgets and reduces the financial scope for alternative investments, e.g. in infrastructure, environment protection etc. On the other hand and (at least) seen from the perspective of enterprises, the lack of job related qualifications may be a more or less strong competitive disadvantage.

Brandsma/Kessler/Münch (1995) note that, as a consequence, over the past few years these countries have been rethinking the structure of their education systems and trying to improve or even to reorganise their VET system by promoting the role and importance of the field of vocational education (included the field of CVT).

4.4 The current situation of CVT in the EU Member States

Data sources and lack of information

Analysing the situation and prospects of CVT in Europe requires permanent monitoring and collecting of relevant and comparable data for all Member States. Although most of them have made efforts, statistical information on CVT still is insufficient.

On the European level, empirical work was done e.g. by the Task Force Human Resources (1992). A recent attempt are the evaluations based on the FORCE programme. Although some of the national surveys are rather detailed in monitoring specific data sets, only eight national studies have been published up to now. The summary analysis of the national contributions of Brandsma/Kessler/Münch (1995) is mainly dealing with CVT structures, but does not offer detailed statistical information.

Another important research work concerning the situation of CVT in Europe was carried out in the context of FORCE and LEONARDO by the Institut National pour le Développement de la Formation Professionelle Continue (INFPC; cf. Ant/Kintzelé et al. 1996). This rather extensive analysis also concentrates on CVT structures (the new Member States Finland, Sweden and Austria could not be taken into consideration).

Another important data source is the survey of in-company CVT (CVTS) carried out by Eurostat 1994 for 50 000 enterprises in the EU. Results were published in 1997. In addition, some national surveys in the frame of this survey have been published and describe very detailed the national situation (see for example the German studies of Schmidt 1996 and Schmidt/Hogreve 1995). The CVTS will presumably be repeated in 1999/2000.

Also to be mentioned is the synoptic study of the European Commission (Tableau de bord 1996) referring to the European labour market policies and including some information concerning the European status quo structure of CVT systems.

Further, but less specified data concerning CVT are available from the research work of the UNESCO (World Education Report 1995) and – with a stronger reference to VET and CVT – of the OECD (1996a, b, d). The main problem of these OECD studies is that they do not analyse all European Member States.

The problem of appropriate indicators

Because of insufficient data, analyses of the situation of CVT within the European Member States must be restricted to a primarily structural approach. For such a structural approach it is necessary to define comparative indicators. Following the proposition of the OECD appropriate indicators are:

- cost, expenditure and finance;
- duration of measures;
- types of providers;
- volume of participation;
- learner appraisal and
- the recognition of skills and competencies.

This canon may be complemented by the structure and degree of legal foundations and by the different forms of CVT-courses existing in the European Member States.

> **These indicators formulate a program of research; but at the same time they also illustrate the difficulties: many of them cannot be evaluated because of the lack of data or because of the fact, that existing data are not comparable.**

Framework and main structures of CVT-systems

First of all it must be underlined that the socio-economic situation within the Member States is the most important factor of influence concerning the degree of social welfare and economic prosperity. Although education and especially VET and CVT certainly do have positive effects there are lots of other influences on socio-economic development.

Thus, for example, economic growth cannot be explained exclusively by investing more in education and training (cf. Part Two); similarly, economic competitiveness of a nation or a enterprise is not an effect of VET or CVT alone. And finally, persistent and high unemployment cannot be solved solely by educational upgrading. As pointed out several times in this report, there is no one best way to solve labour market problems. But VET and CVT are unrenounceable components of an integral employment strategy.

> **To put it in a nutshell: When analysing the objectives and functions of VET and CVT, it must be pointed out that many of the central problems of European education policy are "in a closer view externally caused problems: problems of the labour market, of economic structure, of tight public budgets, of the increasing pressures of international competition" (Münk 1997a; cf. also Lipsmeier 1996).**

Relationship and connection between systems of initial training and CVT

Following the above mentioned reflections, the situation and the effects of the initial phase of vocational training are closely related to the importance and functions of the succeeding CVT: If a well structured and developed system of initial vocational training does not exist, CVT measures very often cover all forms of vocational training, including initial practical training. Several Member States (Denmark, France, United Kingdom) subsume special forms to the field of CVT which can be characterised as initial vocational training or occupational retraining, in particular for young people (see Brandsma/Kessler/ Münch 1995).

Most reforms aim at the improvement of quality and success of VET and CVT on the one hand and intend, on the other, to contribute to the national labour-market policy by facilitating the transition to work and promoting the idea of lifelong learning. As a consequence the connection between VET and CVT becomes closer and the dividing line between initial VET and CVT vanishes, e.g. in the Netherlands, Belgium, United Kingdom (Brandsma/ Kessler/Münch 1995).

In contrast to this there are Member States with a rather strong dividing line between initial and continuing VET. This applies in particular to those countries which attach importance to initial vocational training (e.g. Austria, Germany, Denmark, Luxembourg). Nevertheless, in Germany, too, there are serious demands of pedagogic researchers calling for a closer link between VET and CVT in order to promote lifelong learning and to make vocational training more flexible (Lipsmeier 1977; Münk/ Lipsmeier 1997; Brandsma/Kessler/Münch 1995).

Decentralisation and regionalisation

In almost all fields of politics, and concerning VET and CVT, too, there are tendencies towards decentralisation and regionalisation. Focal goal is the supply of the needs of the SMEs, which normally act locally and which are a decisive factor for regional development. International research has shown that within the process of 'systemic competition' very often "local clusters" or "regional agglomerations" are emerging which are linked by networks of local acting SMEs.

Research for the northern, highly industrialised regions of Italy shows that SMEs which operate within the framework of such a network have competitive advantages because of synergies and efficient forms of cooperation (Hurtienne/Messner 1994; Porter 1990). Within such networks, the cooperation of local actors (public institutions, educational and research institutions, institutions providing VET and CVT courses, SMEs and social partners) becomes easier and more efficient.

The European Commission reports that in some Member States even networks of educational institutions are emerging which do not only provide the local needs of vocational qualifications and skills but also act as advisors for local enterprises concerning the formulation of appropriate enterprise strategies of CVT development (European Commission 1997i).

Certification of competencies

Member States have established different models of certification of competencies (see for the following: European Commission 1997i).

- The UK has the longest tradition concerning this issue. The above mentioned NVQ and SVQ systems and the TECs and LECs represent a well developed infrastructure for the certification of competencies.[40] British TEC's and LEC's recently started programmes ("Gateways to Learning") in order to establish a network which combines the different institutions of vocational counselling. The next step will be realised during 1997, when the UK tries to join all public institutions in a new institution, the "Qualifications and Curriculum Authority".
- Other Member States, for example Belgium and Luxembourg, are just beginning to establish institutional structures in order to offer individuals and enterprises professional counselling and evaluation of their needs of vocational training and CVT.
- Ireland established "TEASTAS", which is an institutional structure of certification implemented on the national level. These certifications are referring to training courses on secondary level and CVT.
- Within the context of the so called "AMU" (vocational training of adults) Denmark introduced in 1995 a system to evaluate the vocational qualifications during long-term measures of vocational training.
- Another way was chosen by France, which formulated a law in 1991 in order to facilitate the evaluation of the CVT needs of occupied people. This "bilan de competence" is an instrument which serves enterprises as well as individuals.

These examples illustrate that the efforts concerning the accreditation of qualifications and the certification of competencies are as strong as young: The measures implemented in the Member States are very different but they all follow the same principle: Developing instruments of measurement and evaluation of qualifications and competencies in order to define the provision and the needs of the existing qualifications. And they all have a common aim: Improving the quality of vocational training and continuing vocational training and enhancing mobility within the EU Member States.

Improving the quality

The efforts concerning the certification of CVT are closely connected to the goal of improving quality. The market of the providers and the forms of CVT are rather complex and diversified in most European countries.

Improving the quality of CVT therefore means: Improving the subjects and contents, improving the processes of knowledge transfer, improving the quality of the trainers and improving the organisational and institutional framework (Brandsma/ Kessler/ Münch 1995).

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[40] There are doubts, however, whether the benefits exceed the high costs of the UK system.

To assess the accreditation and the screening of CVT providers, their organisational structure, the quality of their didactical concepts and of their trainers by exactly defined criteria is a central quality measure. A second one is the evaluation or screening of educational outcomes, i.e. the evaluation of the learning results of CVT courses. Brandsma/Kessler/ Münch (1995) state an increasing awareness of the importance of a "Total Quality Management" within CVT. A common approach is the certification of CVT courses by implementing and using the international ISO Standards.

Finally, the authors outline two general European tendencies concerning the development of strategies in order to improve CVT quality.

- The standardisation and comparability of diploma and certificates should allow a higher degree of transparency for the employed (or unemployed) participants and for the enterprises as well.

- The second trend refers to the process of European integration: Member States are increasingly aware of the European dimension of CVT. Although a real success is not yet visible, the importance of certified qualifications that are comparable with other Member States is being pointed out in several national reports as well as the necessity that such certificates are recognised throughout the European Union (ibid.)

Legal framework and CVT-funding

The legal framework of CVT defines and determines the margins and the responsibilities of CVT activities. This concerns the degree of CVT regulation by law, organisational aspects including funding arrangements and the access of individuals to CVT courses.

CVT regulation

The most important characteristic of the legal structures of CVT is the fact that we find a widespread conglomerate of laws and institutional regulations established by different public institutions according to their special interest, e.g. labour market policy or regulations of CVT design taking place at vocational schools. This diversified situation is seen in the Netherlands, Belgium, Denmark, Luxembourg and Germany (Brandsma/Kessler/ Münch 1995) and causes a high degree of intransparency. Some Member States are trying to summarise their CVT regulations within a single legal framework or at least to arrange the different laws within a collection of laws. Such efforts have been made during the last five years in Denmark and Luxembourg.

Enlargement and improvement of the CVT systems but also the attempt to gain more transparency are the motives of reforming existing laws or creating new ones in Belgium, France, Spain and Greece. In contrast, the UK has opened CVT provision consequently to the free market. The local TECs are independent from public institutions and try at first to meet the specific needs of enterprises.

Tasks and competencies of governments, institutions and social partners

Since the late 1980s OECD analyses have proved two main tendencies concerning CVT policies: First the tendency to strengthen informal learning (which mostly implied the reduction of the size of formal, institution-based adult education) and "second the shift away from the role of governments in finance and provision and towards an emphasis on the responsibility of the social partners and the individual adult learner" (OECD 1995f, p. 145). This policy towards "training markets" implies that the matching of skill demands to supply "is left to forces other than those associated with government regulations" (ibid., p. 141).

In many cases the social partners play an influential role in national policy and, even more, on the sectoral and regional level. Here, the social partners have overtaken central and concrete tasks, for example the formulation of contents and extents of measures planned in the field of CVT. Brandsma et al. (1995) quote as examples Denmark, the Netherlands, Italy and the UK. This tendency of regionalisation leads to a shift of competencies and responsibilities from governments to the local level.

The increasing responsibilities of the social partners and of local or regional actors is in particular the case in the Netherlands, Finland Italy and Portugal, Spain, France and Germany where CVT is more and more treated and designed within the framework of

Table 3-10: CVT expenditures (EUR 12)

	expenditures for CVT (MECU)	salary+ wages (% of CVT expenditures)	employed people (%)	legal foundations concerning financing CVT
B	554[1]	1.4[2]	10[3]	0.25 % of the sum of wages and salary; recent law for a compulsory settlement of enterprises for disadvantaged groups[17]
DK	800[4]	—	10	all employees and enterprises have to pay a labour market delivery of 5% of the gross salary resp. of the gross wage
D	34250[5]	5.0[2]	25-30[2]	collective agreements; release or sabbatical
EL	164[6]	0.7	4[7]	0.45% of the sum of wages and salary (since 1991)[16]
E	989[14]	—	7[14]	0.6% from the enterprises (employers) and 0.1% from the employees (drawn from the budget of social security); since 1992[16]
F	18787[6]	3.3[2]	33	1.5% of the sum of wages and salary (0.15% for SMEs with less than 10 employees)
IRL	336[8]	1.8	42[9]	0.1% of the sum of wages and salary (in some sectors 0.25%):
I	5200[10]	2.5[10]	3[10]	0.3% of the sum of wages and salary
L	53[11]	1.2	24	none
NL	1400[12]	1.7[13]	32[13]	0.64% – 3.20% of the sum of wages and salary in dependence from the collective agreement of the sector
P	189[13]	1.1[13]	6	5 % of the annual budget of the social security[16]
UK	23224[15]	—	48	none

1) estimation for 1991; 2) estimated rate; 3) concerns 10% of labour force of the Flemish community of Belgium; a survey of 1986 states 25%-30% of the employees; 4) referring to expenditures of the public sector; the expenditure of the private sector totalled 520 MECU; 5) 1992; 6) estimation for 1992; 7) estimation for 1991; 8) estimation for 1989; 9) referring to on- and off-the-job-CVT; 21% of all employees participate in off-the-job CVT courses; 10) estimated for 1991 (estimated percentage rate of the sum of wages and salaries); 11) 1993; 12) 1990, only private enterprises; 13) 1990; 14) estimations for 1993; 15) 1987; 16) data from Ant/Kintzelé/van Haecht/Walther 1996, p. 76; 17) data from EU Commission (Bericht) 1997, p. 11 (Source: FORCE-Bureau [Fiches FORCE]).
Source: Brandsma et al. 1995, p. 33

collective agreements (European Commission 1997i).

Funding concepts

The high degree of diversification of CVT structures in Europe applies also to the models of financing. Very often the existing funding arrangements are not coherent even within one country: most Member States have a mixed CVT financing system (Brandsma/Kessler/Münch 1995).

In general, there are three modes of CVT financing:

- the financing of CVT courses is mostly organised by or for enterprises;
- the financing of CVT courses for disadvantaged target groups is mostly organised by the state;
- the financing of CVT courses is mostly organised by individuals or participants and by enterprises or the state as well (co-financing).

With the restriction that data are not complete and not always comparable, Brandsma et al. tried to create a synopsis *(table 3-10)*, which gives an overview on the different CVT funding systems in Europe.[41]

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[41] Some updates and changes were made by Munk/Lipsmeier 1997, see for these modifications the key of table 3-10.
Cf. also Part One of this report.

The financing system of the UK stresses the duty of enterprises, which are the most important resource for financing CVT although a certain degree of public control is possible (by certifying and guaranteeing quality), and although the public sector grants some tax incentives in order to mitigate the costs of enterprises.

Another model of financing is the establishment of financial funds, which are constructed very different in detail. In some Member States, e.g. France (since 1971), Italy (since 1993), Greece, Ireland, Belgium and the Netherlands, the enterprises have to bear the costs for this funds alone, whereas in Denmark employees and employers since 1997 contribute to the "AMU"-system.[42] The Spanish system is based upon a national agreement concerning CVT, which imposes a payment of 0.6% on enterprises and of 0.1% on employees. In Portugal and in Germany the budget of social insurance is the most important source for financing (public) CVT measures.

An important problem is the funding of CVT for disadvantaged groups. The forms of financing are rather similar among all Member States and consist of a redistribution of contributions to an unemployment fund or of tax revenues. The revenues are redirected to public institutions concerned with CVT measures and with the organisation of specific schemes in favour of unskilled people, unemployed and others (Ant/Kintzelé et al. 1996).

Access to and participation in CVT

Individual right of access to CVT and educational leave

Individual right of access to CVT means the right of every employed person to participate in CVT courses according to his or her personal interest even if there is not a direct benefit for employers (Ant/Kintzelé et al. 1996). CVT in this context explicitly includes such courses which have no close connection with the qualifications required at the working place.

The majority of the Member States guarantees a legal right of access to CVT; there are some others which are characterised by a "legal vacuum" (e.g. the UK). A third group (the Netherlands and Luxembourg) is currently discussing this subject within the framework of the construction of a CVT act (European Commission 1997i).

A legal right of access to CVT is very often connected with the right to educational leave (which may be paid directly or indirectly by employers). Such a right may be constituted by national or regional laws or it may be fixed within collective agreements (European Commission 1997i; Ant/Kintzelé et al. 1996). Some of the Scandinavian countries (in particular Denmark) have not only established educational leave, but also introduced a job rotation system.

The postulate of an unrestricted access to CVT was formulated in 1989 in the "Social Charter", art. 15:

> "*Every worker of the European Community must be able to have access to vocational training and to benefit therefrom throughout his working life... The competent public authorities, undertakings or the two sides of industry, each within their own sphere of competence, should set up continuing and permanent training systems enabling every person to undergo retraining more especially through leave for training purposes, to improve his skills or to acquire new skills, particularly in the light of technical developments.*" (European Commission 1990, p. 16)

Level of qualification and participation in CVT

Although it seems obvious that improved possibilities of access to measures of lifelong vocational learning strengthen social and economic chances, in reality CVT is primarily effective to maintain or to improve the social status or position. In both cases empirical evidence has proved that those who have higher qualifications or have been successful in their career are privileged. Disadvantaged people with low skills or those who never had the chance to work have a rather low probability to participate in job related CVT measures.

Similarly, the OECD states:

> "*Participation in job-related continuing education and training is closely linked to the previously attained level of education. In all countries, those with the lowest levels of education also have the lowest levels of participation in CET, while those with tertiary education attain the highest levels of participation in CET. These findings apply to both the employed and the unemployed. Initial skill differences are thus ampli-*

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[42] Up to 1997 solely Danish enterprises had to contribute to the funds, cf. Ant/Kintzelé/van Haecht/Walther 1996.

Table 3-11: Participation in job-related CVT as a percentage of the employed population aged 25 to 64

	Year	Primary education	Lower secondary education	Upper secondary education	Non university tertiary education	University-level education	All levels of education
			During the 12-month period preceding the survey				
FIN	1993	–	27	40	61	61	41
F	1994	8	28	42	72	57	40
D	1994	–	15	28	43	50	33
			During the 6-month period preceding the survey				
S	1995	28	31	41	60	60	44
			During the 4-week period preceding the survey				
B	1994	1	1	2	4	6	3
DK	1994	–	7	14	21	24	15
EL	1994	–	–	–	–	–	1
IRL	1994	1	2	5	7	8	4
I	1994	–	1	2	–	3	1
E	1994	0.3	1	6	5	8	3
UK	1994	–	3	12	24	24	13

Source: OECD [Education at a glance] 1995, p. 133

fied by subsequent training decisions by employers and employees." (OECD 1996a, p. 131 f.).

Table 3-11 illustrates that in all Member States (and in several OECD countries as well) the CVT participation rate corresponds significantly to the previous level of formal educational and vocational qualification.

Participation of unemployed in CVT

This tendency of a structural inequality of CVT access also applies to the unemployed. Since unemployed persons in general cannot participate in CVT measures provided by enterprises, most of them participate in compensatory or curative CVT measures, which are provided and financed by government or other corporations.

Although these measures should be primarily aimed at the most vulnerable among unemployed persons, e.g. low skilled, *table 3-12* shows (as far as data were available) for all EU countries a similar distribution as for employed persons: Higher qualified workers have a significantly increasing chance of access to publicly paid CVT.

The table illustrates further that CVT participation of unemployed is generally rather low. Only in those Member States which use CVT as one instrument to combat unemployment do the rates become higher. This is the case in France where unemployed workers belong to the most important target group of CVT. Germany has much lower rates of unemployed CVT participants but its specific programs funded by governmental legislation (according to the Employment Promotion Act) with considerable support of CVT for unemployed are probably underrepresented in the OECD figures. This may also be due to the fact that in some countries retraining measures are expressively not defined as "CVT" (cf. the introduction to this report).

Most Member States have launched more or less expensive programmes during the last decade in order to integrate or reintegrate unemployed into the labour market. In Spain and Portugal, these measures were part of national reforms of VET or occupation plans; in others they were concentrated towards the enlargement and improvement of already existing CVT offers. This strategy was chosen by Belgium, Denmark, France, the Netherlands, the UK and (to a smaller degree) also by Germany.

Table 3-12: Participation in job-related CVT as a percentage of the unemployed population aged 25 to 64

	Year	Primary education	Lower secondary education	Upper secondary education	Non university tertiary education	University-level education	All levels of education
				During the 12-month period preceding the survey			
F	1994	14	22	38	66	75	35
D	1994	8	10	19	24	21	16
				During the 4-week period preceding the survey			
B	1994	–	–	–	–	–	5
DK	1994	–	7	12	10	18	11
EL	1994	–	–	–	–	–	1
IRL	1994	0.4	1	4	8	9	2
I	1993	–	–	–	–	–	1
E	1994	1	5	16	14	35	8
UK	1994	–	2	7	15	14	6

Source: OECD/Education at a glance 1995, p. 134

Table 3-13: Enterprises[1] providing CVT in the EU (1993)

	EUR12	B	DK	D	EL	E	F	IRL	I	L	NL	P	UK
%	58	46	87	85	16	27	64	77	15	60	56	13	81
1000	898.7	26.8	34.3	178.7	14.9	116.2	114.3	7.7	128.8	2.3	47.1	31.9	195.7

1) more than 10 employees. Source: Eurostat: CVT-Survey 1994, p. 1

Most of these strategies aim at imparting basic skills and offering a second (or even a first) chance on the labour market. Normally such measures follow the concept of job-related learning. As already stated above, CVT alone cannot be an appropriate instrument for active labour-market policy (at least not for the group of unemployed). Brandsma et al. (1995) resume in this context, that the low efficiency of such measures - concerning the re-integration to work - is widely known.

The enterprise approach of CVT

Although we are not able to identify exactly CVT as factor of influence among the variety and complexity of further factors for economic growth and productivity, most researchers confirm that CVT is indispensable. This position also is held by OECD stating that CVT (formal and non-formal types included) increases worker productivity (OECD 1996a). Given this correlation, enterprises should actively promote CVT in order to increase their own growth and productivity.

Enterprises represent the most important CVT providers in the European Member States *(table 3-13)*.[43]

Compared to the European average of 58% the strongest providers of CVT are found in the more developed Member States. A high number of enterprises providing CVT is a basic requirement for broad access to CVT. Two of the most important factors for CVT provision is the size of enterprise and on the other hand the industrial sector. Concerning the enterprise size, there is an increasing awareness of Small and Medium-sized Enterprises (SMEs).

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43) Most of the following information is drawn from the results of the CVT Survey (CVTS) which was carried out by Eurostat 1994 for EUR 12. The CVTS is based upon a sample of around 60 000 European enterprises with a size of 10 employees and more (cf. European Commission/Eurostat forthcoming).

The relevance of SMEs in Continuing Training

The European economy is characterised by an overwhelming domination of SMEs[44] which therefore are also of interest for strategies and impacts of CVT.

In EU, 66% of all employees are working in SMEs; in most southern Member States this rate is even higher: 85% (Greece), 81% (Spain), 78% (Italy and Portugal). The lowest degree of SMEs is found in the UK (58%) and Belgium (56%). Furthermore, SMEs are probably the most important "job-creators" in Europe (Kotthoff/Reindl 1990).

In particular the very small enterprises (less than 10 employees) have an important quantitative relevance not only in the southern European States (for example Greece), but also in other EU countries. An economic analysis referring to EUR 15 states, that

- ❑ more than 90% of all European enterprises employ less than 10 persons;
- ❑ in 1992, 8 million enterprises in Europe had only one employee;
- ❑ small and very small enterprises are active in various economic sectors, whereas
- ❑ medium-sized enterprises are active mainly within manufacturing industries, and
- ❑ large enterprises dominate in the traditional capital-intensive industries and in the large- scale service industries (Eurostat 1996e).

Among others, SMEs are highly innovative. Research and Development is a central aspect of the economic activities of SMEs (Eurostat 1996e). They in general adapt easier to modernisation because their employees achieve and improve their vocational skills in close proximity to the working process – a structural advantage to the "Big Industries" (Georg 1995; Kotthoff/Reindl 1990).

But there are also problems concerning CVT provision of SMEs. For example, a large part of CVT measures provided by German SMEs is not carried out on a highly professional level. It can be stated that the degree of professionalisation augments with the size of the enterprise. Facing these problems, the situation of the SMEs in general and especially in relationship to the development and improvement of CVT has become a focal point of interest within the field of European policy.

Activities of the European Commission concerning SMEs

CVT in SMEs is one of the most important "action fields" of European programmes. SMEs have been a central subject of the FORCE Programme which preceded the LEONARDO DA VINCI programme.[45] Increasing professionalisation in enterprise-run CVT-activities has been an important focus within the FORCE Programme which was estimated to be the largest European CVT network (European Commission [FORCE-Kompendium] 1993c; CEDEFOP [European Research Directory] 1996b).

> **This demonstrates, that SMEs themselves and also the policy of the EU are aware of the structural disadvantages concerning CVT within SMEs and that the EU is willing to improve their competitive power. In addition, measures are to be mentioned which were taken within the diverse programs to support the special needs of SMEs. Most of them are an integrated part of LEONARDO now, and some of them are combined with further programmes of the European Commission.**

One of the reasons for the increasing awareness of the special situation of SMEs is that this regional oriented policy is closely linked to labour market policy. The Commission states that Denmark, Finland, Sweden, Italy, Belgium and the Netherlands have made strong efforts to create public committees on a local level, composed of social partners and local governments which combine measures of vocational rehabilitation and reintegration with courses in vocational training incl. CVT (European Commission 1997i).

Portugal established a network of local advisors which aim at developing the industrial advancement of the SMEs on the one hand and the creation of

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[44] SMEs are according to a definition of the European Commission those enterprises, which employ up to 249 employees (cf. Eurostat 1996e, p. 26)

[45] The LEONARDO DA VINCI programme started in 1995 and comprised all EU activities concerning VET and CVT

Table 3-14: Participation of employees in CVT courses by enterprise size (1993) (percentage of total employment)

	10-49	50-99	100-249	250-499	500-999	> 1000
EUR 12	13	18	23	31	34	43
B	14	15	16	30	46	42
DK	37	32	37	34	33	28
D	17	16	16	22	22	34
EL	4	12	17	19	24	18
E	7	9	15	26	31	45
F	11	24	31	43	45	54
IRL	24	32	46	59	47	59
I	2	5	9	15	23	31
L	14	17	23	30	14	39
NL	13	19	24	30	30	38
P	5	6	11	12	23	32
UK	20	28	36	43	48	52

Source: Eurostat: CVT-Survey 1994, p. 3

training courses (VET and CVT) on the other. The same tendency is found in the UK since the 1980s with the foundation of regional TECs and LECs. The social partners in Denmark and especially the Trade Unions have established a model of "strategic development of the labour force" ("SUM") which is based on collective agreements and aims at creating different models of common educational planning. And finally the Flemish Community in Belgium has established a network for the development of VET and CVT which co-ordinates the activities of relevant institutions of vocational education and of enterprises (European Commission 1997i).

Table 3-14 shows the strong correlation between enterprise size and the degree of access and participation in CVT courses: A first view shows that the rate of CVT participation increases with the size of the enterprise within a range from 13 % for small enterprises to 43 % for large industries. This strong correlation does not only hold true on the European level but also on the level of most Member States.

The table documents further that the level of participation within Europe is rather different. Taking for example the size of 10-49 employees, the participation rate CVT courses oscillates between 2 % in Italy or 5 % in Portugal and 24 % in Ireland or even 37 % in Denmark. Similar differences can be found within the other size groups.

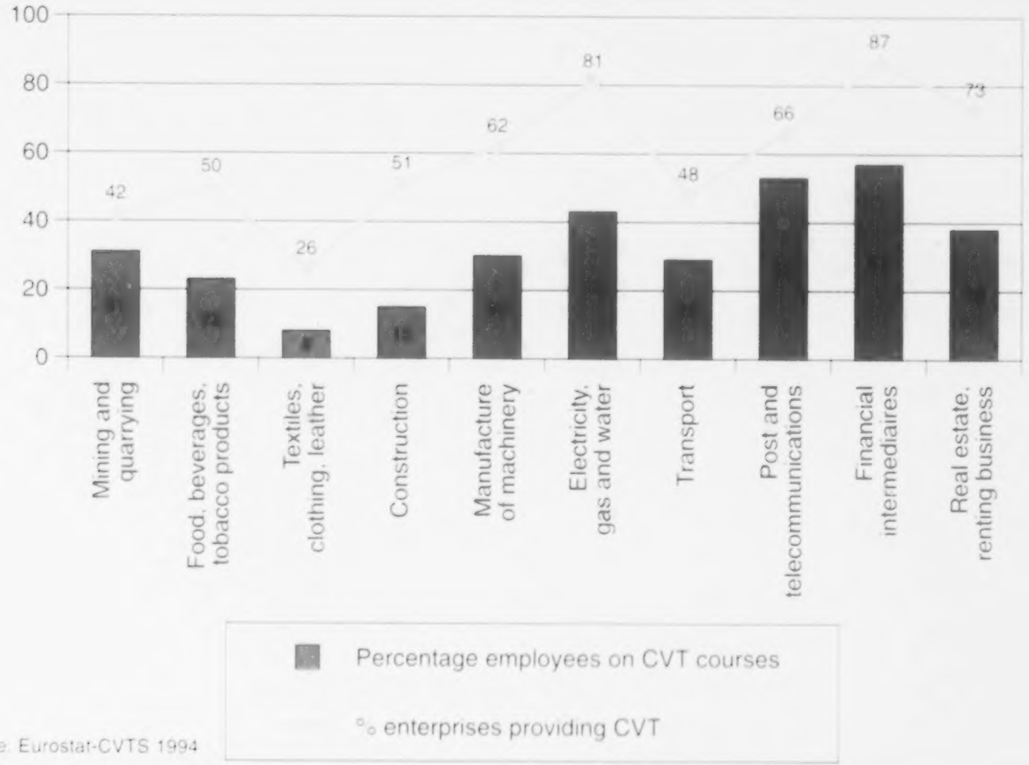
Two exceptions are worth mentioning: Firstly Denmark, which has a rather well-balanced CVT distribution and is the Member State with the highest participation rate (37 %) in the smallest size group. Secondly Germany, which has three groups with a rather equal distribution of the participation rate.

Development of CVT

The impacts and results of CVT measures are not easy to measure. There are increasing efforts (and increasing success) in several fields concerning the situation and the development of CVT within SMEs. Brandsma/Kessler/Münch (1995) summarise:

1. increasing number of CVT participants in all different forms of CVT throughout Europe over the last two decades;
2. steadily growing rate of enterprise investments in CVT;
3. external CVT counselling (development of plans and strategies for CVT) as a part of the organisational planning of the enterprises;
4. promotion of CVT by agreements between the social partners;
5. establishment of sectoral funds for CVT in order to create new CVT structures in certain sectors;

Figure 3-5: Sectors, CVT courses and employees participating in CVT



Source: Eurostat-CVTS 1994

6. promotion of CVT by tax reduction, subsidies etc.;
7. intensification of contacts between SMEs and the institutions which offer CVT measures;
8. growing integration of CVT within the process of work and development of "learning cultures" in order to create the "learning enterprise" (Staudt 1995).

CVT participation in different economic sectors

A main result of the CVT survey of European enterprises is that differences of access and participation are to a high degree dependent upon the sector, in which CVT takes place. As *figure 3-5* illustrates the range of CVT participation rates between sectors is more than 40 percent points: The highest participation is found within the sectors 'Financial intermediaries/banking and insurance' and 'Post and telecommunications' and the lowest ones in 'Construction' 'Textiles, clothing, leather'. This documents that the question of sectoral characteristics can be more central than national differences.

> This reflects the fact, "that the more modern, higher added-value sectors of economic activity regard training as an essential prerequisite to remaining competitive, or that they possess the necessary resources to provide training" (European Commission/Eurostat, forthcoming, p. 4). Eventually this is at the same time a confirmation of the hypothesis, that the increase and development of new technologies and of new forms of work organisation requires a higher degree of vocational training and of the necessity of updating skills in a changing labour market.

4.5 Conclusions

Throughout Europe numerous problems affect continuous vocational training: The ageing of European societies, a substantial degree of social inequality within the Member States, strong regional disparities within and among the Member States, a long-lasting combat against unemployment and high numbers of individuals who are structurally disadvantaged in the labour markets.

(1) In all Member States there is a growing awareness of the need to improve the structures and measures concerning CVT and Lifelong Learning. Efforts to this end have been made at all levels of social and political activity; they aim at reducing the negative effects of unemployment by strengthening approaches of second chance, of compensatory CVT, of Open Distance Learning and others and at promoting CVT in order to attain or maintain economic competitiveness.

(2) During the last decade the European Union has launched a number of activities to promote lifelong learning. These concern not only the architecture of the legal and institutional framework for CVT but also efforts to develop the discussion between the European Member States and to support them in solving their problems. A crucial problem of central EU memorandums (e.g. European Commission 1991a) and guidelines concerning the framework of European policy, however, is the fact that often a consensus between all Member States could not be reached.

(3) The people living in Europe claim their rights for adequate vocational qualifications and the chance to upgrade these qualifications. Seen from the individual perspective not only economic interests but also aspects of self-realisation concerning their work should be considered. Even enterprises have recognised that modern forms of work organisation require more than mere "productive" skills. CVT thus should also promote core qualifications and those social competencies necessary to improve the effectiveness of work.

(4) Concerning specific problems of CVT, one of the most crucial ones is the lack of money. If it is true, that the most successful strategy of the European Member States is to invest in human resources, it is contra-productive if enterprises cut expenditures for VET and CVT in a situation of economic crises. A decline in the quality of human resources would be short-sighted in a situation where high level vocational qualifications are needed more than ever. Thus, for example, the ETUC criticises the lack of effort in implementing the recommendations of the European Council concerning access to CVT (1993) and states that in most Member States no real progress was made. The conditions for access even deteriorated due to the reduction of public funds (ETUC Report 1997, quoted by European Commission 1997i, p. 28).

(5) Another serious problem is the lack of transparency between the different CVT systems. In its recommendation concerning access to CVT, the European Council 1993 stated that because of the variety of measures and forms of CVT in Europe it is hardly possible to get an overview of impacts and results.

(6) A detailed analysis of CVT structures and developments in Europe is hampered by a considerable lack of data. This situation is improving slightly but up to now there exist no well-defined indicators as for example those developed and discussed by the OECD. Therefore we need more research-based monitoring concerning the development of CVT in Europe which is based on differentiated and comparable data.

(7) The analysis of CVT in Europe illustrated that there are common efforts but no substantial impacts. For example, the CVT survey has shown that in EUR 12 only 28 % of all employees have had access to CVT in 1993. This appears insufficient although the tendency is increasing. In particular the less-developed Member States were less successful than the others whose VET and CVT systems more or less have a long tradition. This discrepancy is, according to the European Commission (1997i), certainly the most serious problem:

> *"The Commission notes that the most significant initiatives and the extension of continuing training to include lifelong learning, are taking place in Member States which are already fairly advanced in terms of access. This draws attention to the risk of a growing gap developing between the different countries, and the need to take this into account in structural fund programming, especially in relation to the Cohesion countries." (p. 41).*

(8) It may be expected that the common problems and economic challenges in many fields of policy and

in particular of VET and CVT gradually will lead to a political rapprochement of the Member States. This may also be supported by the policy of European institutions, as the discussion concerning the modularisation approach and the certification and accreditation of skills demonstrates. In addition, the aim of an rapprochement was explicitly expressed by the European Council in Florence (June 1996) and confirmed at the Dublin Council in December 1996:

> *"The European Council underlines that the educational and training systems in the European Union will need to adapt profoundly." (European Council of Florence 1996, quoted by: European Commission 1997i, p. 6).*

(9) The ageing of our working age populations and the changing skill requirements of jobs together with changing values assigned to work require a new order of initial and continuing training (Volkholz 1992). Initial training will no longer prepare for the whole of working life: a second phase of basic qualification in later life - coupled with associated continuing training - is expected. These increasingly blurred demarcations between initial and continuing training require a better co-ordination and targeting of both training routes.

5 Training and employment for disadvantaged groups[46]

The expected socio-economic effects of targeted labour market measures (and training in particular) are closely connected to the CVT-related activities mentioned in chapter 4. They can be roughly classified into three categories :

- *distributive effects*: does a measure redistribute employment in the right direction? To what extent is the target group covered? What are possible side effects for other groups?
- *labour market outcomes for beneficiaries*: does the measure enhance the employment opportunities, earnings, quality of jobs for the target group?
- *macro-economic effects*: can one observe effects on the general level of unemployment, wages, the government's budget?

In the follow, we refer to a disadvantage if people belong to the following groups at risk or have the following characteristics (often also an accumulation of several disadvantages):

- immigrants and ethnic minorities;
- handicapped or disabled people (physical, mental, social, e.g. single parents);
- the low-skilled or unskilled;
- early school-leavers;
- welfare recipients;
- older job seekers;
- people with a criminal record;
- the long-term unemployed;
- people with an unstable job career;
- people with health problems.

5.1 Distributive effects

From a distributive point of view, the so-called Matthew effect[47], or the 'law of perverse distribution' is a well-known phenomenon in literature on social expenditures. In the context of labour market training, it refers for example to the over-representation of young, short-term, highly skilled job seekers in training programmes.

Barriers to enter VET programmes

A first possible explanation is that the most disadvantaged groups are almost by definition not eligible for participation in mainstream labour market programmes (wage subsidy schemes, enterprise allowance schemes, initial training and further training). Most programmes are confined either to registered unemployed, or even in some cases to those entitled to unemployment insurance benefits.

Recipients of a minimum income guarantee (MIG) and other unemployed persons who are not entitled to unemployment benefits are particularly vulnerable in this context in almost all countries. Single parents in the UK, the long-term unemployed classified as 'disabled' in the Netherlands and the older unemployed in Belgium and France are other examples of disadvantaged groups that are considered as being 'out' of the labour market in some countries (yet not in all countries) and therefore ineligible - or eligible only as an exception to the norm - for programmes designed to combat exclusion from employment.

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[46] *This chapter is a summary of the contribution of I. Nicaise and J. Bollens (1997): Training and employment opportunities for disadvantaged persons.*

[47] The expression refers to the enigmatic verse from St-Matthew's gospel (chapter 13, verse 12) which states that 'shall be given to those who have, and they will have in abundance; but from those who do not have, what they possess shall be taken away.'

Creaming off: dilemma between equity and efficiency?

The view that vocational training produces a greater yield from 'strong' job-seekers than from their 'weak' counterparts is widespread. Consequently, few facilities are able to resist the temptation to give priority when filling up their vocational training programmes with candidates who already possess a relatively favourable labour market position, unless the law explicitly reserves these programmes for weaker target groups (Serrano/Toharia 1992; Verdié/Sibille 1992; Schömann 1993; Anderson et al. 1993; Nicaise et al. 1995b). Even in such selective programmes which favour risk groups, however, we find that the individuals with better labour market characteristics within these groups still tend to be favoured.

The training establishments concerned have strong arguments to justify their creaming-off behaviour; for example, they claim that all unemployed people have the same right to assistance in finding work, including those who are better placed. Moreover, those providing the training programmes are keen to maximize their creditworthiness with employers - employers who after all select the best job-seekers (Verdié/Sibille, 1992). Also governments or other funders are placing emphasis on the 'effectiveness', and evaluate those institutions particularly by the use of employment ratios after completion of training as a criterion of output, a yardstick of quality, or even a basis for funding.

Some economists will state that we simply have to learn to live with the trade-off between effectiveness and equity, arguing that it makes no sense to operate an adverse selection system and only provide training to the less able candidates. Anderson et al. (1993) illustrate this apparent trade-off by showing[48] that the 71% placement rate of JTPA-trainees[49] in Tennessee would fall by one quarter if the target of the programme were reoriented towards the least educated job seekers.

Nonetheless, the conceptual basis of this view remains questionable because the added value of training programmes cannot be measured in terms of simple placement ratios only. Such placement ratios measure after all (in addition to the possible effect of the training) also the effect of all antecedents (i. e. previous initial training, work-experience etc.) which have nothing to do with the training programme as such.

The fact that characteristics such as "young age, short duration of unemployment, gender: male, higher previous education or training, resident, normal health, normal social security status, etc." raise an individual's employability, *besides training*, does not imply that they improve his or her trainability.

Given the fact that it is difficult to measure the direct output of training programmes, the use of *differential* placement figures[50] would in any case be a more correct (though still indirect) criterion. If this criterion is applied to the concept of effectiveness, we can observe that the so-called dilemma between equity and efficiency is largely false.

Risk groups often derive more benefit from training than the average job-seeker. According to Bollens/Hooge (1996), the net employment effect of training for the unemployed in Flanders (Belgium) is greater for women, the poorly educated, non-Belgians and the long-term unemployed. Similar findings are reported in recent evaluations of ESF-objective 3 programmes (training for at-risk groups among the unemployed) in various EU countries.

5.2 Effects for the beneficiaries

Most evaluations of training programmes display positive net effects on re-employment probabilities: after correcting for individual characteristics (and selectivity bias in participation) the average employment rate after 6 months appears to be 10 to 20 percentage points higher among participants compared to control groups. Yet some studies of selective labour market policies have pointed at poor, and sometimes even zero or negative employment effects (see for example, OECD 1993; Pedersen/Westergård-Nielsen 1993).

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[48] with advanced two-stage probit models accounting for selection bias

[49] JTPA = the Job Training Partnership Act, a major training programme for economically disadvantaged groups in the US.

[50] the difference in placement ratios between candidates with identical characteristics who have and have not been trained

In the absence of deeper analyses, one would be tempted to attribute the causes of the failure to the target group. However, there is some evidence that the effects of training can be improved by better matching between provision and the needs of the target group.

Some aspects:

- Some long-term unemployed have had problems at school and their fear of repeated failure can prevent them from attending courses. The best way of overcoming this problem is that training courses correspond to their qualifications and stimulate the self-confidence of the unemployed (rather than making them compulsory).
- One shortcoming of many training schemes is that they are too short for groups who lack elementary skills such as literacy and numeracy, or basic work attitudes. Or in some other cases, pre-qualifying courses exist but are not linked to subsequent stages of training.
- Financial costs: participants have to incur additional expenses (direct costs), and/or have to postpone or reduce their job search activities while attending courses (indirect costs). Policy-makers should acknowledge that normally neither the direct material costs, nor the indirect costs can be borne by disadvantaged participants; in other words, adequate remuneration of participants is an essential condition for success.
- It is also necessary to remove psychological barriers (James 1993). Obstacles such as a negative self-image, fear of failures, threat of exclusion, fatalism etc. should be removed by linking provisions with social assistance in a holistic approach.
- Some of the most disadvantaged unemployed (older, unskilled, long-term unemployed) are less keen to participate in training than the average job seeker. For some of them, training is not necessarily the best strategy to start with. If the expected return to training is low - e.g. for reasons of age or former school failure - or if the financial need is so urgent that it does not allow for postponed incomes, *direct employment* seems to be a better response in the short run, possibly supplemented by training in a second stage (Wagner 1990; Lynn 1992; Chérain/Demazière 1992). This justifies the strategy of many local employment initiatives to establish 'social economy projects' within the secondary labour market, which give priority to (non-profit) employment over training.

5.3 Macro-economic impact

The net employment effect of training programmes diminishes as dead-weight[51] and substitution[52] effects increase. Selective measures targeted at disadvantaged groups are generally thought to cause relatively less dead-weight losses than general measures for various reasons (Bassi/Ashenfelter 1986; OECD 1992, 1993):

- the measures will automatically concern the more labour-intensive branches of the economy, where more low-qualified workers are employed;
- the value added of training is potentially more substantial for low-skilled than for skilled job seekers;
- employers are relatively less inclined to recruit disadvantaged workers without state intervention, as compared to highly qualified and "productive" workers.

On the other hand, it may be argued that the *substitution* effects of targeted training programmes are greater, because of the greater competition (between more and less skilled job seekers) for jobs at the bottom of the job distribution.

Dead-weight and substitution effects are extremely difficult to estimate empirically. Estimates can be made either via econometric studies that include - besides the number of beneficiaries of the programmes concerned - all other relevant context variables (growth of the GDP, wages, flows of vacancies etc.), or via surveys among employers. Although the latter are often less sophisticated from the theoretical and methodological point of view, they sometimes yield quite reliable results.

A noteworthy example relating to disadvantaged groups is the study by Ameels/Lopez-Novella/Van der Linden (1994) who interviewed a stratified sample of 400 employers, selected on the basis of their

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51) A dead-weight effect occurs, if employers are subsidised for employing former participants of a measure but would have employed additional staff in any case.

52) If an employer recruits a former participant of a scheme and receives a subsidy, but dismisses someone else at the same time.

recent experience with labour market measures for disadvantaged groups (poorly qualified youngsters, MIG-claimants, women re-entering the labour market, and handicapped persons). They found dead-weight effects of 55% for recruitment subsidies, and of 34% for training measures; substitution effects were estimated at 30% for recruitment subsidies, compared to 9% only for training.

Concerning the lower dead-weight effects for training, it should be noted that the net effects of training also depend on post-training placement probabilities, whereas recruitment subsidies are by definition linked to placement.

The limited macroeconomic impact of training (and, more generally, of active labour market policies) for disadvantaged people is hardly surprising, if one considers their underlying philosophy, which, according to Layard/Nickell/Jackman, (1991) is mainly to 'improve the search efficiency of the unemployed', or in other words, to boost labour supply and to make it more flexible. Such measures do not fundamentally solve the problem of unemployment; they are more effective as a means of redistributing (un)employment than as employment creation strategies.

> Their employment creating effect is limited and rather indirect, through the avoidance of bottlenecks and inflationary wage pressures in specific segments of the labour market. This suggests that the net employment effect of (targeted) training programmes is likely to be more positive in boom periods (OECD 1993), or when they are linked with demand side measures.

5.4 Overcoming disadvantages

Unemployment problems and difficulties in finding and keeping a job affect certain social groups considerably more than others. This group of disadvantaged persons is quite heterogeneous, however. A tentative generalisation could lead us to summarise as follows: deficiencies with regard to education and skills are due to insufficient (or a lack of) initial schooling or to the possession of inadequate or outdated knowledge. The latter points to a possible solution to the problem which would entail people upgrading their work skills by following appropriate vocational training.

The problems relating to disadvantaged people are set against the backdrop of a dramatic reduction in demand for low-skilled workers. The current problems do not result exclusively from a lack of low-skilled job opportunities although these are shrinking. Other factors include displacement by capital and/or by higher skilled workers, based on the premise that low-skilled workers are relatively too expensive. In this case it can be assumed that training alone will not be sufficient to bring about a permanent improvement in the employment prospects of the disadvantaged.

Analysis of the population participating in mainstream labour market and training programmes reveals a typical under-representation of the disadvantaged groups. A similar phenomenon can be observed in programmes specifically aimed at disadvantaged target groups.

There are several possible explanations for these observations. There are legal, administrative and institutional barriers which rule certain underprivileged groups out of the programmes. One factor is the selective behaviour of those in charge of the training programmes, particularly where selection (and funding) is based on the labour market success of graduates. This often leads to select applicants with a stronger profile - even though, paradoxically, the latter derive less benefit from training than others would.

An additional factor is the lack of motivation, fear of failure, negative school experience and possibly material thresholds preventing disadvantaged from participating in training courses. Last but not least, the programmes may not be adapted to the particular needs and aspirations of the majority of the weaker groups.

> However, several studies seem to indicate that the net effectiveness of the training initiative[53] is higher for participants who are in a weaker position on the labour market (low-skilled workers, long-term unemployed etc.). This observation is to support a reinforced training policy for disadvantaged groups and also undermines the rationality concealed in the "creaming-off" behaviour of those responsible for training programmes and policies.

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53) I.e. the subsequent variance in employment opportunity between a participant and a non-participant with comparable characteristics.

As a consequence, it is fundamental, firstly to draw the attention of policy-makers and the responsible persons within firms to this issue. Furthermore, evaluation criteria commonly used to assess training courses need to be revised: instead of relying on the gross transition-to-work figures, evaluation should be based on the net effect of the training with reference to the characteristics of the target group. In addition the use of accurate indicators on the efficiency of these policies will indirectly promote redistribution to the benefit of backward target groups.

In addition to the impact of labour market and training measures on the chances of individual participants, it is also important to examine its effects on the unemployed and on the economy as a whole.

While the available research literature fails to answer a number of relevant questions, several elements are identified with regard to the form and content of training opportunities which could increase their effectiveness.

When setting up training initiatives, it is important to take into account the capabilities, knowledge, needs and aspirations of the target population. For example, training for disadvantaged groups is often shorter than other training courses, although these groups apparently require a longer training period. Furthermore, in order to increase the level of participation, to reduce the dropout rate and to raise the training success, it is important to consider motivation and social guidance in a holistic approach.

> Targeting also implies that the needs of the labour market are taken into account. This aspect is sometimes disregarded in vocational training for disadvantaged groups. It is therefore important that further efforts be made to develop an instrument for exploring skills shortages, particularly in those market sectors where job opportunities can still be found for disadvantaged groups. In this context the "proximity services" still appear to offer opportunities for both training and employment of weaker groups. Several other issues such as quality control, cooperation with social partners and the public employment services and certification are closely linked to this issue.

The integration of disadvantaged groups into the labour market is a complex issue. Instruments such as vocational and pre-vocational training certainly play a significant role, but they are generally not sufficient. Ideally, the aim should be targeted at the individual, needs-based and focused not only on training, but also on work experience, job search training and assistance, socio-psychological support, and concern for the material and financial status of the job-applicant. Since most training providers cannot possibly cater for all these aspects, the attainment objective should lie in extensive networking and cooperation between all parties involved.

> Several potentially very important issues with regard to evaluation of the effectiveness of training programmes have so far received insufficient attention. The quality of training staff, the training methods used, the extent to which a given instrument yields better results with one group than another, the training site conditions and the scale, duration and intensity of the training are all factors which probably have a decisive influence on effectiveness, but for which little or no evaluation evidence is available. Further research in that direction is consequently urgently needed.

5.5 Conclusions

The main problem of disadvantaged people is the dramatic decline of jobs for lower skilled workers, the increasing selection on the labour market and the continuously rising skill requirements. It can be expected that these trends will even increase in future as the available forecasts indicate.

The under-representation of disadvantaged persons in public financed training programmes is due to a number of barriers, e.g. funding conditions related to a successful integration into the labour market. Other barriers lie in the individual lack of motivation, learning capabilities, psycho-social problems and an insufficient attendance of these people.

The resulting requirements for an adequate training and labour market policy towards disadvantaged are therefore:

- *Prevention of becoming disadvantaged* starts in vocational guidance of young people and continues in career guidance, motivation for initial and continuing training of unemployed or persons exposed to unemployment risks or to inadequate employment.

- *Facilitating the access to programmes* requires information, promotion of motivation (via parents and families, as well), clarification of objectives and chances of continuing training and financial support.
- *The curricular design of the measure* should consider the specific target group, be practice-oriented in taking into account the needs of the labour market and should be assessed in its quality.
- *The duration of the measure* should be adapted to the capabilities and preconditions of disadvantaged. Furthermore, continuing training in phases or modules should be considered.
- *The organisation of the measure* should consider proximity to place of residence, cooperation with the social partners, qualification of the trainers and suited training equipment.
- The measure should be accompanied by *social-psychological attendance and after-care*, e.g. support in finding a job.
- *The continuous evaluation* of the programme should not mainly be based on the labour market success of participants, but much more on the learning and training success and the improvement of their motivation, "socialisation" and self-responsibility.
- For some disadvantaged groups (e.g. people, unskilled, long-term unemployed) *direct employment* in the secondary labour market or in non-profit enterprises - possibly coupled with some form of training-on-the-job) is preferable to mere training measures.
- Concerning employment for the disadvantaged, it seems necessary to develop an instrument for *exploring skill shortages* and labour market niches and to enhance job opportunities in close cooperation with enterprises, the social partners and public employment services.

Part Four

Curricula, Learning Formats and Non-Formal Learning

The aim of this section is to present research studies on the design and redesign of vocational curricula and above all to address the issues of learning venues, learning forms and the identification and assessment of non-formal learning.

Curricular research - which is not fully covered here – is increasingly focusing on the internal modernisation of VET and system-related curricula and qualifications instead of occupation-related skills. The starting point is the need to impart key qualifications and competencies which enable the individual to master different and non-predictable situations and requirements within and outside the world of work.

The approaches here are very different and range from particular, identifiable skills and process-independent competencies to concepts of an integral occupational competence (specific, social and methodological competencies). On the European level, discussions are under way to identify and develop joint elements and principles of co-operation by means of a "European core curriculum" and to evaluate new teaching-learning arrangements and their integration into the world of work.

A further, closely connected aspect is the role of the new ICTs in VET. The central issues dealt with here have to do with the learning and teaching potential of new media, new learning venues and social forms of learning. It seems plausible that new media do not increase learning success to a marked degree but do increasingly create new learning environments and thus a shift away from instruction-led to constructive and self-directed learning processes. This throws up once again the question of the core skills and their furthering and also the readiness and ability for self-directed learning. A central problem to be considered is whether social integration can also be experienced at the computer work and learning place by means of "para-social interaction" and what role traditional education and training institutions will play in the future.

The need to identify and assess non-formal learning at and beyond the workplace is largely accepted today. What is still a matter of controversy is the question as to which "knowledge areas" should be to the fore: objective and verifiable knowledge or subjective-normative knowledge. The selection of the method to assess these different knowledge types is decisive for the question of the reliability and validity of non-formal learning and hence for "measuring what people know". And finally it is of decisive importance for the social legitimacy of non-formal learning whether all participants and actors and their interests can be taken into account to an adequate degree.

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1 Key qualifications and curriculum development[1]

1.1 Curricular reform and new learning environments

This chapter should present a comprehensive overview on the theories in the domain of curriculum research and development as well as current approaches in the design of innovative teaching and learning arrangements. The aim was to examine the relations between institutionalised patterns of curricular (re)design, and related piloting activities with new learning schemes. Moreover, some leading ideas that direct the debates on re-thinking curricular frameworks and curriculum processes should be discussed.

For several reasons, these broad and demanding aims could not fully be realised in this report. Therefore, a preliminary framework for a future systematic reporting on these issues will be proposed.

The following discussion focuses on 'flexibility' and 'key qualifications' which are the basis for further analyses. Secondly, some approaches related to curriculum development are presented. These reflections contribute to a policy-debate concerning the development of future-oriented qualifications and VET-systems.[2]

1.2 Flexibility and key qualifications

Flexibility in VET

The issue of 'flexibility' has been and still is a key element in the debates related to themes such as 'introduction of new technologies', to 'new production concepts', to 'global networks' in production and marketing and to 'organisational innovations'.

In order to specify the particular meaning of 'flexibility' for the development of vocational education and training systems, Nijhof/Streumer (1994) view flexibility as the consequence of changing labour markets, technologies and work organisation.

These developments affect education and training institutions as well as society in different ways. In taking a systems view, Nijhof/Streumer distinguish between contextual, input, process and output factors. Different kinds of feedback and interrelations exist between these factors.

(1) *Contextual factors* play a decisive role in putting pressure on educational institutions to respond. 'Flexibility' in this context requires 'responsiveness': The ability to react to observed mismatches or imbalances on the labour market, for example, shows the flexibility of an institution to take into account contextual factors such as new technologies, changes in skill demands etc.

(2) This responsiveness of VET may lead to new interfaces between the labour market and VET design - the *"input"* - and refers to the capabilities of VET to react to (unpredictable) changes. Research by the International Labour Organisation reflects a clear, rational and deliberate effort to design curricula for occupational flexibility. These curriculum designs have been and continue to be developed in response to changes in occupational profiles and employment patterns (Chrosciel/Plumbridge 1995).

According to the analysis of Raffe (1994b) three approaches to promote responsiveness in VET systems merit attention:

- ❑ *curricular flexibility*, i.e. increasing exchanges and cooperation in order to redesign or reform curricular structures and frameworks;
- ❑ *flexibility of delivery*, i.e. increasing practical cooperation and exchanges between different VET providers and between different learning environments;
- ❑ *flexibility of pathways*, i.e. creating alternative options with equally attractive prospects for further training or occupational career.

(3) The *processes* have mainly to do with the internal conditions of VET. Here a number of instruments exist to match goals and means. In many cases VET has changed from a rather traditional form into a flexible, highly individualised system of training and education. Making time and content (and the whole learning environment) flexible is a dominant reaction of many contemporary systems to the pressures of the labour market. In this respect new curricular

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1) *This chapter is largely based on the contribution of P. KAMARAINEN and J. STREUMER (1997): Curriculum development and key qualifications (draft version).*

2) A comprehensive overview on curriculum development and innovation in the EU Member States and the partner states was presented at a workshop in September 1996, organised by the ETF (European Training Foundation 1997).

strategies are being developed, often applying new information technologies in training and education.

'Curricular vehicles' in this context are:

- teaching/learning environments based on simulation and games;
- flexibility-clauses concerning entrance and leaving conditions.
- the use of credit accumulation that may be related to modular structures of curricula.

(4) These processes are the means to develop a special kind of *output:* people with new qualifications or 'key qualifications'. The main link between these processes is 'transferability', i.e. the competence or ability to apply their skills to new and unforeseen situations. The output of the system can thus be defined as highly and broadly skilled people, who have the potential to master complex and changing work situations.

Key qualifications and competencies

The concept of key qualifications

The common denominator of current debates on key qualifications is given in a summarising study of the technical assistance office of the Euroteenet programme (European Commission/Task Force Human Resources 1995b).

Due to a number of reasons work and its environment has substantially changed (cf. Part Two). This applies to the organisation of industrial processes, structural change of economies, new technologies, work organisation and enterprise structures. New qualifications are required, apart from the "traditional" instrumental skills. The concept of key qualifications, introduced in education and labour market debates in the early seventies, currently is witnessing a revival.

The original concept of "key qualifications"[3], in particular in the context of social and labour market discussion, was developed in the early seventies by Mertens (1972, 1974). Key qualifications aim to vary "the methods and content of education to ensure versatility" (Mertens 1972, p. 110). They are seen as "an essential precondition of mobility within any genuine pattern of vocational flexibility." (Dominicé, 1976, p. 1)

The point of departure for the development of key qualifications concepts was the awareness that traditional manpower forecasting (cf. also Part Two) is limited or even unable to anticipate content-related qualification requirements which could be transformed into curricula.

For this reason, key qualifications are seen (Mertens 1974)

- as a survival tool in an increasingly complex and unpredictable world;
- as a strategy to foster innovation and social change.

The fact that the systems of education/training and of employment diverge, but nonetheless - in the ex-post view - have converged can only be explained by a link: mobility.[4] Mobility or flexibility is able to harmonise those divergencies with or without frictions (Mertens 1974). Key qualifications serve in this context as an ex-ante tool of harmonisation between skills and requirements. Thereby, they should as far as possible prevent any friction.

> Schooling[5] for the existence or even survival in a modern society has at least three dimensions:
>
> - schooling to problem-solving and to developing the individual's personality;
> - schooling to provide a basis for occupational existence;
> - schooling in social behaviour.

These aims are to be met by key qualifications; the basic concept of Mertens is illustrated in the *box*.

---

3) The German "Qualifikation" comprises not only formal learning and training, but also informal or experience-led skills. Thus the term "key qualifications" is broader than the achievement of certificates or licenses.

4) Here the focus is on "vocational or occupational mobility", i.e. the capability of persons to perform different work tasks or to switch more or less frictionless between different jobs. This does not exclude, however, other forms of mobility or flexibility, e.g. regional, transnational, status mobility etc.

5) The German term "Schulung" (schooling) used by Mertens is more than mere education or instruction. Its meaning and translation into other languages therefore is context-bound, including "enlightenment", "grounding" or others.

Mertens' concept of key qualifications

Mertens (1974) distinguishes between four types of key qualifications; their transformation into curricula should be a next step to be taken by curricular researchers and pedadogists.

Basic qualifications ("Basisqualifikationen") are qualifications of a higher order or the common denominator of specific abilities. They permit a vertical transfer of application within the specific requirements of occupations or in society.

- Schooling aims are, for example, logical, critical, structured, conceptual and contextual reasoning in addition to analytical, cooperative and creative approaches.
- These schooling aims can be made more tangible, e.g. through practising analytical techniques, means-aim economics, social rules and techniques, planning ability and techniques.

Horizontal qualifications ("Horizontalqualifikationen") facilitate the use of information in order to broaden the knowledge horizon or guarantee horizontal transfer between different spheres of knowledge.

Four schooling aims should be implemented in curricula:

- to be informed about the essence of information, e.g. based on knowledge in semiotics, communication science and informatics;
- to know how to gain information, e.g. based on knowledge in documentation, media, statistics;
- to understand information, e.g. based on knowledge on symbols, models, languages, technical plans, semantics;
- to know how to process information, e.g. by promoting the ability to express oneself, to analyse and interpret statistical data, to reduce redundancies, to formulate target-group related essential conclusions.

Transferable knowledge elements ("Breitenelemente") that are similar in different occupations or fields of knowledge. General cultural techniques, as introduced in the last century (reading, writing, mathematics etc.) belong to this category as well as modern transferable skills. Thus, for example, a number of different occupations require similar competencies, e.g. measurement techniques, labour safety and environmental protection, maintenance, project management, cooperation skills, etc.

Vintage factors ("Vintage-Faktoren") should eliminate intergenerational training differences between younger and older people. They are subject to adult education and training and should impart knowledge in those areas in which older workers were not trained or in which there has been substantial change. Examples are: social and legal issues, basic economics, computer knowledge, foreign languages, natural science, history, etc.

These key qualifications could partly be provided as compulsory in curricula, and partly within a broad offer of specialised, advanced and supplementary training courses. They should be enlarged and updated regularly. Mertens saw it as essential that schooling of key qualifications should start early in pre-school education and should be continued in succeeding education and training phases over all of working life. Dominicé (1976) therefore proposed the complementary term of "life qualifications".

The concept of key qualifications was subject to several criticisms, in particular of pedagogists (e.g. Elbers et al. 1976; Geissler/Orthey 1993). One of the criticisms is that this concept (not the term) is not new but was introduced as early as in the last century, e.g. by A.v. Humboldt and J.J. Rousseau.

Another point of criticism is that several of the elements of key qualifications are arbitrary to a large degree and could be replaced or supplemented by a number of similar knowledge elements. The main criticism - which, however, is not a real criticism but reflects the state of pedagogics - is that the transformation of key qualifications into concrete curricula would be extremely difficult.

The concept of competencies

Despite these criticisms, the concept of key qualifications on the whole has been widely accepted and was further developed. One major development is the concept of competencies[6] introduced in the 1980s and 1990s. Kaiser/Kaiser (1994), Bunk/Kaiser/Zedler (1991) and Bunk (1994) expand Mertens' concept of key qualifications. Five competence categories to be implemented into school and training curricula can be distinguished:

- *Subject-specific competencies* to perform a specific job are mainly acquired in vocational or on-the-job training;
- *Self-responsibility or participative competencies* are meant to promote self-directed learning and self-responsible work, to be able to make decisions and to assume responsibilities;
- *Team or social competencies* should nurture the ability to work, co-operate and communicate in a team or group and to act socially;
- *Systems or methodological competencies* should promote the ability of understanding cause and effect processes and of applying experience to new tasks, of efficiently organising projects and work, of knowing about procedures and divisions of responsibilities (e.g. in authorities, state, etc.);
- *Reflexivity competencies* should instil a critical review of one's own work in order to improve its quality and to identify and test more efficient procedures. This is the aim of quality circles, for example, in training and the acquisition of metacognitions (how and by using what means problems are solved).

1.3 Key qualifications within different VET cultures

On the basis of different national traditions and institutional contexts different concepts and approaches to the implementation of "key qualifications" have been formed (key skills, key or core competencies). It is worthwhile noting that differences in terminology also refer to real differences between the underlying approaches.

In the following a framework is introduced in order to make the national debates and approaches more transparent on the European level. These approaches can be classified according to the following criteria:

- what is the main focus (or the reference framework) of the basic concept;
- what is the main impetus to develop a new quality in vocational learning and to promote a new quality in the utilisation of the outcomes of learning;
- which tools and instruments are considered to be the main 'vehicles' for developing appropriate curricula for vocational learning.

Key skills

Debates particularly in the UK relate to 'key skills' and can be characterised in the following way:

- The basic concept refers to a *particular set of identifiable 'skills'* that should support a more content-specific learning in education and lifelong learning. Currently the UK authorities favour skills such as 'communication', 'application of ICT', 'decision-making', 'team-working', 'improving self-learning'.
- The main thrust is to *enhance the skills of individual learners* and to enrich the (hitherto narrow) vocational learning. The concept 'key skills' aims to transcend particular (vocational) contexts.
- Within curriculum development, 'key skills' are related to *specific modules or units* that are complementary to the founding elements of curricula ('basic skills', 'specific skills'). These modules

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[6] Note that the German, English and French meanings of "competencies" differ somewhat from each other.

or units are to be assessed as essential components of the learning outcomes.

Key and core competencies

Several more diversified approaches and debates can be aggregated as 'key or core competencies'. They are located between the two poles 'key skills' and 'key qualifications'. Characteristics of these approaches are:

- Several concepts refer in a more global way to a set of competencies that *transcend traditional divisions of labour and occupational profiles*. Very often these competencies are defined negatively ('extra-functional', 'process-independent' competencies) or indicate a broader range of utilisation ('broadly applicable', 'transversal or transferable competencies').
- Other approaches do not focus on a particular set of skills and the enhancement of individual learning processes as a starting point. Instead, they are primarily related to the *needs for organisational learning* (i.e. group- or system-related working, learning and participation) within new production concepts. Thus, the enhancement of the competence-basis of (individual) learners is related to needs to promote an organisational learning culture and to improve collective work performance as well as collective mastery of production processes.

> Concerning curriculum development the main objective of both concepts is not focused on particular units or modules but on learning designs that promote the ability of the providers to relate individual competencies to the respective organisational context and to contribute to the development and improvement of work performance.

"Modern" key qualifications

The third kind of approach can be conceived as a particular variant of the second one mentioned above. However, in the (mostly German) debates on 'key qualifications' there are additional features that require particular attention:

- The initial debates on 'key qualifications' were launched by a future-oriented vision (in particular based on Mertens 1972, 1974) that challenged the established structures of educational and vocational qualifications and training in a radical way. In ensuing debates the concept was developed further. These approaches were to promote the *'inner modernisation'* of educational and vocational qualifications.
- In a further stage the notion of 'key qualifications' was subject to different *conceptual re-interpretations* and a pragmatic 'canonisation'. Key qualifications were

  a) reduced to *particular characteristics* of individual (vocational) learning (in line with the UK concept of 'key skills'),
  b) refocused (and renamed) as a concept of *integral occupational competence* ("integrierte Handlungskompetenz") which refers to an integration of specialised knowledge and abilities ("Fachkompetenz"), social and participative competence ("Sozialkompetenz") and methodological mastery of new challenges in changing work situations ("Methodenkompetenz").
  c) canonised as goals within *vocational training regulations* (autonomous information retrieving, planning, task-implementation and quality assessment);

- From the perspective of curriculum development the reductionistic concept (a) drew attention to assessment. The integrative approach (b) has emerged in the context of curriculum redesign that integrates diverse elements of the curriculum to a 'holistic curriculum approach'. The 'canonisation' (c) related these two poles to each other with common criteria to be promoted both within curriculum development and within renewal of assessment patterns. It is worthwhile noting that the 'reductionistic' position and the 'canonised' interpretation are not necessarily related to a revision of qualification structures whereas the 'integrative' position is promoting new linkages both on the level of qualification frameworks and on the level of delivery.

1.4 Development of 'core curricula' in a European perspective

Identification of "European core curricula"

The three strands mentioned above - key skills, key/core competencies, key qualifications - give rise for different initiatives concerning curriculum development and/or curriculum redesign. Thus, some of the initiatives focus on particular elements of curricula whereas others develop particular 'learning designs' that may have a transfer-promoting effect throughout the whole curriculum. Further initiatives are based on a 'holistic curriculum' approach and try to develop linkages between these 'learning designs' and other parts of the curriculum.

From the European perspective it is important that such initiatives are not isolated from each other but enable exchanges and mutual learning. Therefore, the following characterisation tries to present three kinds of initiatives as complementary (and not substitutive) approaches.

The idea to develop European 'core curricula' for VET is strongly associated to the debates on key skills (previously also called 'core skills'). In this context the main thrust has been to introduce sets of key skills modules for vocational curricula.

> On the level of European cooperation the idea of a 'core curriculum' can be developed in two directions:
>
> - as an attempt to identify common *core elements* for a 'European core curriculum';
> - as an attempt to identify common *core principles* for a collaborative curriculum development.

These attempts require de facto the analysis of 'core problems'.

Core problems

The main impetus in analysing 'core problems' which are meant to serve as a tool for a 'situative curriculum development' is to analyse the skilled work performance (as required by learning organisations) and to transfer them to curriculum development.

Onstenk et al. (1990) define 'core problems' as the central characteristics of a vocational task in which considerations, choices and decisions are demanded of the employee. These considerations and choices are based on the application of knowledge and skills; the use of a correct register of actions will determine whether someone is regarded as a more or a less professional or efficient employee (cf. also chapter 3.2). An "expert" in such a situation can act rapidly and effectively, on the basis of a repertoire of skills and experiences of similar situations.

Core problems have a (vocational) skill-related and a situative component.

- The *skill-related component* involves the identification of the various dimensions of a problem, of possible inconsistencies, of the importance of various factors of influence, of the necessity for reasoned choices etc. This component touches upon the core tasks of the curriculum.
- The *situative component* refers to the strategic and social dimension in the concrete performance of a task. Strategic behaviour is necessary, if a certain task has to be performed in a situation where it is not sufficient to make recourse to a particular set of rules or experiences for decision-making, but where decisions, choices and considerations have to be made which fit that specific situation. Social behaviour, oriented towards people, is also characterised by uncertainty and cannot be formalised.

The 'core problems approach' is not a curriculum development strategy as such. However, it provides a framework for relating the organisational aspects of key/core competencies to vocational curricula. Moreover, it provides a framework for identifying some innovative learning designs that promote self-organised or self-directed learning as contributions to a curricular strategy to promote key/core competencies.

Teaching-learning arrangements and working-learning assignments

The last type of initiatives can be interpreted as the extension of the previous approach towards a '*holistic curriculum*' redesign. The difference between the two approaches is that development of complex teaching-learning arrangements refers primarily (although not exclusively) to school-based learning environments.

The development of integrative working and learning assignments refers to the collaboration between school-based education and workplace-based training. The most well-known pioneer initiatives have been implemented within several German model-pilot schemes ("Modellversuche").

Two examples should illustrate the evolutionary dynamics of this kind of initiative and their transfer potential on European level:

(1) The University of Gottingen in the early 1990s supported and accompanied a model-pilot scheme that focused on the development of complex teaching/learning arrangements for commercial education. In the initial phase the curriculum redesign focused on two areas (business administration and accountancy). In the redesign process these were converted to (simulation-based) *complex teaching-learning arrangements* which required a great amount of self-organised involvement of trainees.

Later on the redesign process transformed other elements of curricula to similar teaching-learning arrangements or to case studies linked to a narrative framework for the 'activity dimension' of the curriculum.

On the basis of this prior experience the university of Gottingen has launched a European co-operation project within the framework of the COST programme. The project examines similar initiatives in 16 countries.

(2) The university of Bremen (research institute ITB) is supporting and accompanying an ongoing model-pilot scheme in southern Brandenburg. The main aim of the experimental curriculum is to provide an entrance qualification to (vocational) higher education (Fachhochschulreife), similar to the qualification of a skilled worker (Berufsausbildung).

In the experimental curriculum a particular role has been given to *integrative 'working and learning assignments'* which link the subject-based components to workplace-related assignments that provide focal points for the whole curriculum development.

This model-pilot scheme has also provided a basis for the national contribution of the ITB in several European cooperation projects (in particular in the LEONARDO projects "Post-16 strategies" and "Intequal").

These and other pioneer activities and related European projects serve as 'laboratories' for studying in what way and to what extent the whole curriculum can be refocused to promote key qualifications in an integrative sense. The European cooperation projects serve also as laboratories for studying how this kind of 'holistic' approach can provide a basis for mutual learning and transfer of ideas.

1.5 Conclusions

The political importance of key qualification approaches and curricular strategies can be summarised by two questions:

1) What is the political significance concerning the needs and prospects for an *internal modernisation* of VET systems and VET provisions?

2) What is the political significance concerning the needs and prospects for a *structural modernisation* of initial and continuing VET?

Ad (1): Concerning the *internal modernisation of VET* it is worthwhile to note a shift of emphasis between the modernisation agendas of the 1980s and those of the most recent years.

In the 1980s, innovatory concepts for shaping qualification structures, training profiles and curricula aimed to promote cohesion among occupational fields (e.g. technical, commercial, agricultural and health care related VET).

Moreover, the qualification structures, training profiles and curricula had the idea of a common layer of know-how related to an occupational field or to a cluster of occupations (e.g. metal-working occupations, electric and electronic occupations or occupations related to construction industries). Thus, the curricula implemented a common foundation phase followed by successive specialisation.

In the recently introduced frameworks for qualification structures, training profiles and curricula a new approach has been developed. "Pioneers" were occupations related to information and communication technology (ICT) and to new media. In these cases an integrative occupational curriculum reflects the need to develop the basis for common system-related knowledge which has to be enhanced *parallel* to the specific competence basis.

Thus, there is no field-specific curricular foundation which provides a basis for a successive specialisation. Instead, training for design-, maintenance- and marketing-oriented occupations is organised in curricula in which common system-related core-elements are accompanied by parallel training for the respective specialisations.

At present it is premature to anticipate to what degree such a system-based format for shaping qualifications, training profiles and curricula will and can be transferred to other occupational fields or clusters. Yet, it is obvious that the significance of the systemic curricular integration will grow. This will give more importance to curricular strategies that aim to promote 'key qualifications' in an organisation-related and integrative sense.

Ad (2): Concerning the *structural modernisation of VET* there are new challenges which raise the question whether VET systems in the future are able to provide their traditional target groups with acknowledged curricula as well as with traditional career expectations. Concerning this potential contradiction or dilemma, the following aspects point to a rethinking:

❑ There is a need to ensure that VET provisions are equivalent to general education, in particular to higher education (parity of esteem discussion) and that vocational qualifications provide prospects for the accumulation of competencies that support vertical as well as horizontal mobility (discussion on permeability).

❑ There is a further need to ensure that VET provisions open promotion routes during working life and that the qualifications take into account alternative modes to provide access to qualifications beyond full-time VET provisions with conventional curricula.

At present, the EU Member States are facing different needs, problems and potentials. Consequently, they are setting different priorities. However, for intensified European cooperation it could be useful to interpret these policy choices as particular orientations within a common agenda for VET development.

2 New learning formats and venues in the context of ICTs[7]

Multimedia, hypertext and hypermedia, Internet and the World Wide Web as an Information Super Highway are synonyms for developments in the field of information and communication technologies. These 'new media' have led to an almost boundless optimism where the optimising of both teaching and learning is concerned. One of several hypotheses held in this context is that the new media lead to new learning formats and venues in general and especially in vocational training. This hypothesis will be examined from a learning-teaching-theoretical perspective within the framework of this chapter.

Six central questions will be addressed:

1) What kinds of new learning-teaching potential are brought about through the use of new information and communication technologies?

2) In what way do the learning formats change through the application of information and communication technologies?

3) What potential influence do the information and communication technologies have on the social form of learning?

4) Do the learning venues change under the influence of the new technologies?

5) What core skills will become necessary or gain in importance when learning with new media?

6) How can these core skills be furthered?

2.1 Interaction, information and learning

Continuous interaction with the socio-historical environment characterises an individual's life span. Signals and stimuli reach the individual, some of which are perceived. These signals, however, have no meaning by themselves, but it is rather the individual who associates a meaning to these signals according to the current state of his or her 'internal conditions'. By associating a meaning to perceived signals, inner behaviour is realised and information produced.

Internal conditions or dispositions consist of the individual's declarative and procedural knowledge about the world and about the individual himself: *Declarative knowledge* consists of knowledge about the state of the world ("What is the world like?") and the individual ("Who am I?"). *Procedural knowledge* consists of knowledge about how the world and the individual may be changed (Straka 1983; Straka/Macke 1979). Another term for these types of knowledge is *skill*. Skills may be more content related

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[7] *This chapter summarises the contribution of G. Straka and M. Stöckl (1997): New learning formats and venues in the context of information and communication technologies.*

(epistemic structure) or less content related (heuristic structure or problem-solving skills; Dörner 1976).

Information is actually created by the individual; *there is no objective information*. On the other hand, behaviour, activity and operations are not possible without information, whilst at the same time, behaviour is not possible without information. This interconnection describes the core of information processing as a functional unit in which the elements "information and behaviour" are interconnected (Macke/Straka 1981).

Behaviour is unique and not storable; it may be observable (externalised) and non-observable (internalised behaviour). Only information is storable, that is to say behaviour may only be transformed in a storable state of knowledge through information. For this reason, we use the term *'procedural knowledge'* as a part of the internal conditions.

To summarise, the interaction of an individual with his or her socio-historical environment:

- is multidimensional and consists of information, behaviour, motivation and emotion;
- includes three levels: external (or environmental) conditions, internal conditions and those actual events which bridge external and internal conditions.

> On the basis of these considerations, we can define learning as an interaction of the individual with his socio-historical environmental conditions that leads to enduring changes of the internal conditions of the individual. These changes may involve the declarative knowledge, procedural knowledge, motives, values, beliefs, etc. (Straka 1997).

2.2 New media

Whoever investigates the relations between information and communication technologies and learning, inevitably comes up against the so-called new media. Different phenomena are brought together through the new media, and therefore one should first attempt to create a common understanding.

The term 'medium' may be defined in a number of ways, most of which emphasise a medium's role as agent in a material-technical sense of carrier or vehicle. Seen from a learning-theory perspective, however, the technical carrier is of little relevance; rather what he carries, that is the potential learning opportunities in the media.

Some definitions

- *Media* are objects (e.g. a book), technical pieces of equipment (e.g. a flip chart) or configurations (e.g. video system, personal computer) with which messages may be stored and transmitted.
- *Messages* are purposefully coded and structured contents which are perceived as meaningful information and then processed by the recipients, for example, by the learners.
- *Coding* is the labelling, shortening or transforming of contents, that is to say information, into different symbolic systems. The central symbolic systems of human information processing are the verbal system (optical-verbal and acoustic-verbal), the pictorial and the numerical (number) system.
- The *structuring* of the contents is determined in a teaching-learning context by the instructional strategy which will be discussed later.
- *Potential learning opportunities* in the media consist of messages which are stored and transmitted by means of a medium. These opportunities are then picked up by the sense organs of the recipient and are assigned the term "sensory modality".

With the characteristics 'coding' and 'modality', new media may be specified:

- as *multi-codal*, that is they display a number of symbolic systems, or rather codings (at the same time), for example, text, pictures, digits, text with pictures, graphics with inscription;
- as *multi-modal*, that is they address a number of the learner's sense organs (at the same time): auditive (speech, music, sounds), visual (text, pictures, animation) and audio-visual sensory modalities (videos with sound-track).

The difference between multi-coding and multi-modality may be made clear by the following example: if a person reads a text and in addition hears this text in a spoken form, the coding remains the same in both cases (verbal), but the sensory modality changes (from seeing/visual to hearing/auditive). If a person reads a text and also looks at a diagram, the sensory modality remains constant (seeing), but the coding changes (from verbal to pictorial).

2.3 Learning-teaching approaches

The first central question now is: What kind of new learning-teaching potential are brought about through the use of new information and communication technologies?

Potential of new media

The high expectations with regard to the learning and teaching with new media are essentially the result of the possibility of combining different codes and sub-codes as well as sensory modalities. An abundance of forms of expression can thereby be constructed. These may have the following effects on the acquisition of knowledge and on motivation:

1. With the help of the new media, a mental multi-coding of the subject to be learned by the learner can be stimulated and consequently the retrieving of knowledge improved.
2. New media may contribute in a unique way to complex authentic situations being presented realistically and the subject being portrayed from a number of perspectives, in a number of contexts as well as on different levels of abstraction.

However, empirical findings indicate that clear and stringent correlations between the use of multi-media and learning results cannot be established. It may therefore be argued that it is primarily the structure which underlies the implicit or explicit didactic strategies of learning opportunities and which influences the learning process significantly. One medium may be more economic and suitable than another, but is in principle a "means of transport" and therefore irrelevant for the learning process (Clark 1983, 1994).

> "Media will never influence learning. Media are mere vehicles that deliver instruction but do not influence student achievement anymore than the truck that delivers our groceries causes changes in our nutrition" (Clark 1983, p. 445).

Learning theories

Learning-theoretical considerations are central to deciding on a structure when designing a learning opportunity in the media. Learning theories may be differentiated according to which forms of learning are at the fore, such as the acquisition of *declarative knowledge* ("knowing what"), *procedural knowledge* ("knowing how") or *contextual knowledge* ("knowing why, where and when").

Depending on learning theories, learning may be viewed as a passive, receptive process with tiny steps and respective feed-back, as a guided or as an independent discovery process. If in the learning process the mediation of information is at the fore, then this is usually associated with the *instruction* paradigm. On the other hand, a learning process in which the deciphering of information comes to the fore, the working-out on the part of the learner is assigned to the *construction paradigm.*

The learning-theoretical approaches *behaviourism, cognitivism and constructivism (figure 4-1)* may be classified along a continuum, their boundaries being blurred, however (cf. also Issing 1995; Tulodziecki, in print).

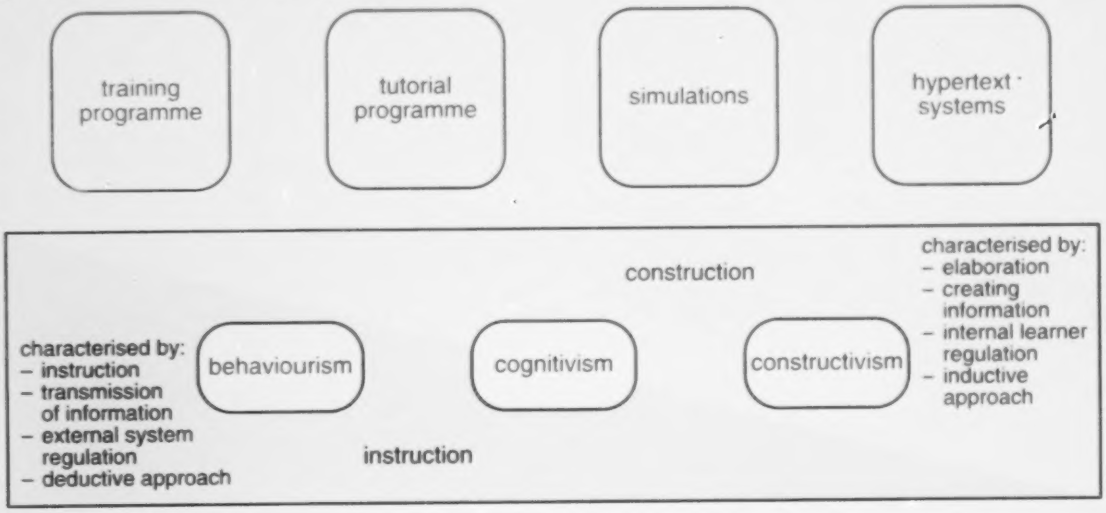
Behavioural learning

According to the *behaviouristic* conception, learning takes place when new links between stimuli from the environment and the individual's externalised behaviour are established (stimulus-reaction learning). On the basis of this conception of learning, teaching is concentrated on the systematic planning, realisation and evaluation of linear, continuous learning paths with regard to specified educational objectives. As a consequence, contents in learning programmes are being divided into tiny, simplified learning steps with specified instructional objectives that every learner would be able to successfully manage.

Without a doubt, the most famous learning-teaching concept is the programmed instruction. With the so-called 'technological change of didactics (Glaser 1965; Flechsig 1976), it was hoped to be able to improve teaching considerably through the application of technical media.

Behaviouristic conceptions of learning previously had a strong influence on the development of teaching programmes. Behaviouristic learning theories are

Figure 4-1: Learning - teaching process


training programme
tutorial programme
simulations
hypertext systems
construction
characterised by:
– elaboration
– creating information
– internal learner regulation
– inductive approach
characterised by:
– instruction
– transmission of information
– external system regulation
– deductive approach
behaviourism
cognitivism
constructivism
instruction

Source: Straka 1997

nowadays represented above all in the form of exercise programmes (for example, vocabulary or typewriting training).

Cognitive approaches

Characteristic of cognitive approaches is viewing the learner as an active and self-directive being. The non-observable, internalised behaviour, i.e. cognitive processes that happen in the course of learning and which were explicitly ignored in behaviourism, now move into central position. Cognitive learning theories view learning mainly as a process of *information processing*, this bearing an affinity to artificial intelligence research (Lesgold 1988).

Constructivistic approaches

Likewise in constructivistic approaches, learning is viewed as an active process in which, however, learners construct their knowledge individually in relation to their subjective experience structures in real (learning) situations. Learning is therefore an idiosyncratic interpretation of the world and the result of the learner's construction achievements.

The learner's active, constructive role places therefore at the centre of attention not the 'infallible' teacher (behaviourism) nor the supportive tutor instructing how to learn independently (cognitivism) but rather one's own active experience.

Unlike behaviourism and cognitivism, no objective informational input and output exist for constructivism. The learner may find himself in an exchange with his socio-historical environment, but the information that he processes in the course of his analysis of himself and the world is produced by himself and integrated into his own knowledge structure (Cognition and Technology Group at Vanderbilt 1992; Baumgartner/Payr 1994). In constructivism, the learner, as a discerning subject, does not reproduce reality, rather he actively constructs it in a process of understanding, the relationship between subject and object being therefore structurally linked (see Glaserfeld 1987).

Whereas behaviourism and cognitivism both hold the view that something 'objective' exists outside the individual learner and it should be therefore able to cause and empirically control learning processes with the means of systematically planned instruction, constructivism permits this approach at the most for basic qualifications in well-structured fields of knowledge (Weidenmann 1993).

Function of media

The function of the media in *cognitive and behavioural approaches* may be characterised as follows: although the cognitive processes of the learner, his or her knowledge, abilities and skills, etc. are taken into consideration during the development of media, the medium loses its significance in cognitive approaches. Media are viewed merely as bearers for structured contents with which certain cognitive processes are meant to be produced in the learner. The decisive factor for learning effectiveness is primarily the instructional strategy with which the contents are organised and for which media, as vehicles, are suitable only to very different degrees. The choice of media may be made dependent on the criteria "effectiveness" and "economy".

The function of the media in *constructivism* differs from that in behaviouristic and cognitive approaches. Since knowledge, according to a constructivistic understanding, may not be mediated but rather itself constructed in concrete situations out of personal experience, learning opportunities in the media are then assessed as to if and how they stimulate the learner's independent activity, serve to construct knowledge in the processing of complex situations and problems and support the acquisition of appropriate strategies in the sense of cognitive tools (Kommers/Jonassen/Mayes 1992; Dubs 1993).

On the basis of constructivistic principles, media have the character of *potential learning opportunites* to support problem-solving processes whereby the instructional elements, although not ignored, do remain marginal. These learning environments are meant to enable the learner to achieve complex teaching goals in ill-structured domains (Spiro et al. 1992). In this sense, the new media such as hypertext/hypermedia systems are especially compatible with a constructivistic understanding of learning.

2.4 New learning formats and venues

In the previous chapter several well-known learning-teaching-concepts were classified. What one notices here is that the so-called "new media" tend to be found on the right-hand side of the continuum *(figure 4-1)*, that is, nearer to the constructivism pole, whereby we arrive at the second central question:

In what way do the *learning formats* change through the application of information and communication technologies (ICTs)?

The application of new media goes hand-in-hand with a continuous transition from instructional to constructivistic teaching-learning-concepts. The use of new media, therefore, leads to forms of *self-directed learning* consequently gaining in importance.

Social forms of learning

This touches on the questions of the influence of the new technologies, on the social form of learning as well as on the venue.

The Internet, or the WWW may serve as a suitable example. The repercussions of the information and communication technologies for the social form and learning venue may be illustrated by the example of the "Internet surfer", that is to say, the learner in the network, or rather a "primal hunting and gathering in the information age".

According to our considerations, two such repercussions may be hypothesised:

1. Through the new ICTs, the form, extent and radius of potential social contacts widen. It remains to be seen, however, whether these contacts, conveyed through the media, are able to replace "real" face-to-face communication.

2. Educational opportunities will in the future be independent of a venue (location) or time. Traditional educational facilities and fixed seminar times will most probably lose relative importance.

Self-directed learning

Thus, the fifth central question is: What core skills will become necessary or gain in importance when learning with new media?

The tendency towards constructivistic approaches in the use of new media - navigating in hypertext/hypermedia systems or surfing in the network - implies a readiness and ability for self-direction. Self-directed learning is therefore in our opinion becoming the survival kit in an information society.

The idea of self-directed learning has a long tradition in Europe (Straka 1997a). Research and development in different scientific disciplines such as in adult education and educational theory have led especially in recent years to this form of learning which needs to be described and explained more distinctly.

With reference to Knowles (1975), one of the prominent advocates for self-directed learning, and by referring to interest and motivation-theoretical approaches as well as to research evidence in the fields of learning strategies, meta-cognition and attribution, self-directed learning may be described as follows *(figure 4-2)*:

> **Self-directed learning takes place when the relationship between learner and subject may be characterised by interest. The learner determines the learning need according to his interest, applies strategies in order to acquire the content, controls the application of these strategies and subjects his achieved learning result to an evaluation (Straka et al. 1996).**

The interest may refer to the content and the proceedings. The strategies include the acquisition, the sequencing and resource management. Controlling includes cognitive, metacognitive and motivational aspects and the evaluation consists in the diagnosis of the learning result as well as the attribution.

Promoting self-directed learning

Here the question is raised as to how these core skills can be furthered? The self-learning ability can be furthered in a number of ways. In principle the following approaches may be distinguished:

- *Direct help* basically concerns a learning-strategy training. The necessary strategies for self-directed learning are conveyed to the learner, so that she or he finally has at her/his command an appropriate repertoire of strategies in order to be able to learn self-directedly successfully. With such an instruction, the learner is directly influenced: self-directed learning is above all a goal but not the means.

- *Indirect approaches* of furthering self-directed learning follow a different path: by appropriately organizing the learning environment, the learners are allowed an amount of scope, of degrees of freedom as well as of options so that self-directed learning is made possible and necessary. In this context, besides the new media - especially hypertext/hypermedia or networks - those approaches orientated along a construction paradigm are discussed, as for example that of anchored instruction (for details cf. Straka/Stöckl 1997). Self-directed learning is the means and the goal of these indirect approaches.

  The constructivistic approach of instruction is one much-discussed possibility of furthering self-directed learning, and one, in which especially the new media have a decisive role to play (Bransford et al. 1991).

There are many reasons for favouring a combination of direct and indirect approaches to promoting the self-learning ability. One principal problem of the direct approach consists in the fact "that people with well-developed cognitive abilities, that is to say with a higher level of development of training measures, often profit more highly than people with lesser developed abilities or with a lower level of development ..." (Friedrich/Mandl, in print).

Moreover, it has been shown that those strategies learned through direct approaches often go to waste if they cannot be applied, practised and enforced in appropriate working environments. A further point of criticism concerning the direct approaches refers to the transfer problem: learners often have difficulties using those learned strategies in another context.

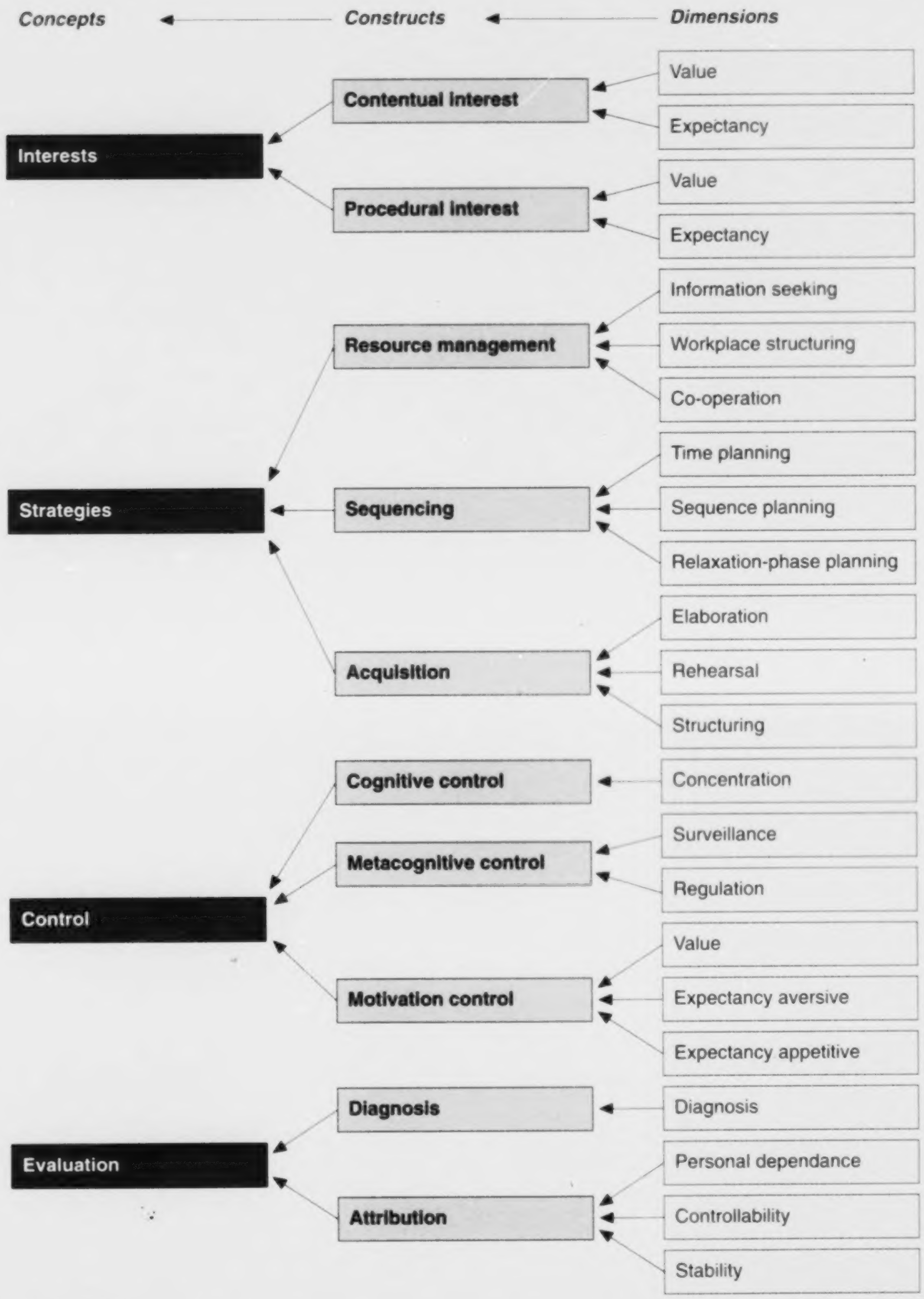
In connection with indirect approaches of furthering learning abilities, the fact that the degrees of freedom made available by the appropriate learning environments may not be adequately used by a row of learners, has proved to be a problem because this may lead to too high demands put on the learners.

The combination of direct and indirect help consists, on the one hand, in establishing available learning environments which make possible and encourage self-directed learning, and on the other hand, in reducing the conveyance of contents in favour of methodical competences, that is to say explicitly making learning strategies the subject to be learned. In this context we might mention the cognitive apprenticeship approach.

The cognitive apprenticeship approach

Because of the disadvantages of direct as well as of indirect approaches, those concepts which combine the elements of direct and indirect furthering of the self-learning ability gain significance especially in the context of *vocational training and further training*. The currently world-wide discussed approach

Figure 4-2: Concepts, constructs and dimensions of motivated self-directed learning


Concepts
Constructs
Dimensions
Interests
Contentual interest
Value
Expectancy
Procedural interest
Value
Expectancy
Strategies
Resource management
Information seeking
Workplace structuring
Co-operation
Sequencing
Time planning
Sequence planning
Relaxation-phase planning
Acquisition
Elaboration
Rehearsal
Structuring
Control
Cognitive control
Concentration
Metacognitive control
Surveillance
Regulation
Motivation control
Value
Expectancy aversive
Expectancy appetitive
Evaluation
Diagnosis
Diagnosis
Attribution
Personal dependance
Controllability
Stability

Source: Straka 1997

of cognitive apprenticeship (developed, among others by Collins/Brown/Newmann 1989) will be presented in greater detail below.

> **The cognitive apprenticeship approach assumes that even today, many complex and important skills such as those required for language use and social interaction are learned informally by observation, coaching and successive approximation. By practising this, the learning of skills and knowledge is embedded in their social and functional context and students become integrated in the culture of experts.**

Reviewing and analysing recently developed teaching methods, a framework with four dimensions was developed that constitute any learning environment: content, method, sequence and sociology.

Content

The content consists of: domain knowledge, heuristic, control and learning strategies:

- *Domain knowledge* includes the conceptual and factual knowledge and procedures explicitly identified with a particular subject matter. This knowledge is best acquired through application in a variety of problem situations.
- *Heuristic strategies* are in general effective techniques and applied for accomplishing tasks; most of them are, however, tacitly acquired by experts in the process of solving problems.
- *Control strategies* supervise the process of carrying out a task, the selection from possible problem-solving strategies, the decision when to change strategies, etc.
- *Learning strategies* range from general strategies for exploring a new domain, to more narrow strategies for extending or reconfiguring knowledge in processes of solving problems or carrying out complex tasks.

Teaching methods

Teaching methods should help students to acquire and integrate cognitive and metacognitive strategies for using, managing and discovering knowledge. Their acquisition and use depends on interaction between the individual's current knowledge and beliefs as well as the social and physical environment in which the problem-solving takes place. Strategies involved in complex cognitive activities may be captured and made explicit. These strategies and skills, used by experts, however, have a tendency to remain tacit. Teaching methods should be designed so as to give the students the opportunity to observe, engage in and invent or discover expert strategies in their context.

Six teaching methods are differentiated:

- *modelling, coaching and scaffolding* as the core of cognitive apprenticeship. These are designed to help students acquire an integrated set of cognitive and metacognitive skills through processes of observation and of guided and supported practice;
- *articulation and reflection* are methods designed to help students both focus their observations of expert problem-solving and gain conscious access to and control of their own problem-solving strategies;
- *exploration* is aimed at encouraging learner's autonomy in defining and formulating the problems to be solved (for further details cf. Straka/Stöckl 1997a, b).

Sequencing

Sequencing consists of principles that guide the flow of learning activities such as "increasing complexity and diversity" and "global before local skills".

- Increasing *complexity* refers to the construction of a sequence of tasks and task environments where successively the skills and concepts necessary for expert performance are required.
- Increasing *diversity* relates to the construction of a sequence of tasks which requires an increasingly wider variety of strategies or skills. Tasks requiring a diversity of skills and strategies are introduced so that the students learn to distinguish between the conditions under which they apply.
- *Global before local skills.* This sequencing of activities provides learners with the opportunity to build a conceptual model of how all the elements fit together before attempting to produce the actual piece. The main effect of this

sequencing principle is to enable students to build a conceptual map before attending to the details of the domain.

Sociology

Sociology of the learning environment indicates that apprentices learn skills in the context of their application to realistic problems, within a culture or work environment focused on and defined by expert practice. The students successively see the skills they are learning being used in a way that clearly conveys how they are integrated into patterns of expertise. And by advancing in learning skills, apprentices are increasing their participation in the community.

This sociology is characterised by five characteristics: situated learning, culture of expert practice, intrinsic motivation, exploiting co-operation and exploiting competition (for a further discussion see Straka/Stöckl 1997).

Readiness and ability for self-directed learning

Those approaches which combine direct and indirect approaches of furthering self-directed learning have now also been developed in the field of new media (Hofer/Niegemann 1990; Liebermann/Linn 1991; Burger/Desoi 1992; Straka/Stöckl 1993, 1994), and basically concern a learning opportunity in the media orientated along a constructivistic paradigm (for example, hypertext/hypermedia systems or simulations), supplemented by adaptive, instructional elements which refer not only to the content but also to methodical fields.

The constructing and reinforcing of the self-learning ability is only one side of the coin. The other condition is that an appropriate readiness is available. Studies undertaken by the Research Group LOS show that the readiness for self-directed learning is especially related to the following environmental characteristics: the experience of autonomy, competence and social integration (Reci/Dyan 1985; Reci/Flaste 1995).

These three constructs may be put into concrete terms for the workplace as follows:

- experiencing *autonomy* at the workplace is when a person has the impression he is able to carry out his work tasks according to his own schedules;
- experiencing *competence* at the workplace is when a person has the impression he carries out his work tasks competently as well as successfully and when he feels himself to be effective;
- experiencing *social integration* at the workplace is felt by a person when his tasks are acknowledged by superiors and colleagues and when he feels integrated in the work community.

Experiencing social integration in the context of information and communication technologies - this being the hypothesis - will be a critical requirement for the future.

The question remains:

> **Will social integration also be experienced at the computer workplace, that is to say the learning venue via WWW when a para-social interaction takes place world-wide with other people? Or will Naisbit's hypothesis "high tech implies high touch" become more relevant then ever before?**

2.5 Conclusions

Discussion in this chapter can culminate in a number of hypotheses which have implications for activities in this area:

The potential of new media

With the use of new media, the individual mental multi-coding of the subject to be learned can be stimulated and consequently the retrieving of knowledge can be improved. New media may contribute in a unique way to complex authentic situations being presented realistically and to the subject being portrayed from a number of different perspectives, in a variety of contexts as well as on different levels of abstraction. This can promote interest in the subject, flexible thinking as well as usable knowledge.

The importance of the medium for the learning success

The learning result is influenced primarily by the instructional strategy structuring the message. One medium as the vehicle delivering the message may be more economical or suitable for particular contents than another. However, no explicit relation between medium and learning result is empirically verifiable.

Learning formats

The educational use of 'old' and 'new' media goes hand in hand with a continuous transition from instructional to constructivistic learning-teaching concepts as well as to self-direction in learning. According to constructivistic conceptions, knowledge is not transmitted but individually constructed in the learner's problem-solving process, that is to say knowledge is constructed in idiosyncratic learning processes.

Social forms of learning

Through the new information and communication technologies (for example, the WWW, Intranets, 'communities of practice'), the form, extent and radius of potential social contacts widen. It remains to be seen, however, whether face-to-face interactions really can be replaced by 'parasocial interactions' through the new media.

Learning venues

Through the new information and communication technologies, an educational opportunity is decreasingly tied to a particular learning venue or to certain times. Educational opportunities will in the future be less and less attended but rather increasingly called up. Traditional educational institutions will most probably lose relative importance.

Core skills

The application of new media and learning under constructivistic 'teaching conditions' implies a readiness and ability for self-directed learning which are therefore becoming the survival kit in the information society.

Readiness for self-directed learning

The readiness for self-directed learning is furthered by experiencing autonomy, competence and social integration.

Ability for self-directed learning

We may differentiate between direct and indirect approaches in furthering the self-learning ability. A combination of indirect furthering (for example, making available appropriate learning environments) and direct furthering (for example, strategy training), and in particular a cognitive apprenticeship strategy, appears to be the most successful approach.

3 Validity, reliability and legitimacy of non-formal learning[8]

Non-formal learning (CEDEFOP 1997a) takes place within the workplace, in leisure activities and in the home. Efforts to increase the visibility of learning taking place outside formal training and education thus should give credit to the role of this "hidden" or "tacit" (Polanyi 1962) learning.

An assessment of non-formal learning is of central importance for individuals in order to ease their entrance into training as well as to improve their labour market eligibility for enterprises in order to increase their potential for human resource management and for societies as a whole in simplifying the transfer of skills between different spheres (education, work, home) and to improve the allocation of resources.

Identification and validation of non-formal learning thus can be viewed as a way of "accounting" for existing or potential competence resources. If appropriate methodologies were developed and accepted, it would be easier for individuals as well as enterprises and the state to "keep stock of" their resources, thus providing a better basis for their use and allocation.

The importance of this becomes clear when applying an economic perspective to the issue. The importance of intangible values (knowledge, skills etc.) has been increasing, relative to the importance of tangible values. As long as no reliable methodologies for the identification and validation of the knowledge potential exist, the factual role of intangibles seems to be underestimated, however (OECD 1996) - in budgets as well as in the management of existing resources.

This chapter is to focus on some of the principal challenges relating to the identification, validation

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8) *This chapter is a summary of the contribution of J. Bjørnavold (1997a) Validation and recognition of non-formal learning: The questions of validity, reliability and legitimacy.* For an update and more comprehensive discussion see Bjørnavold (1997b, c, d)

and recognition of non-formal learning. The major challenge lies in the combination of a micro-focus - i.e. the methodologies to identify and assess learning on an individual level - and a macro-focus which denotes the political, economic and cultural prerequisites to attribute social credit to non-formal learning.

3.1 Conceptual barriers

A multitude of concepts is used to describe the processes in question. Spanning from validation to assessment, accreditation, creditation, accounting and measuring, the choice of words does not always come as a conscious reflection on their linguistic and contextual meaning.[9] Colardyn (1994) has attempted to introduce a conceptual framework distinguishing traditional recognition processes within formal training and education from the recognition of non-formal learning outside formal training and education. In spite of some weaknesses, this definition may be helpful in moving towards a more consistent use of language within this field.

Colardyn suggests a basic distinction between *certification* and *validation*. Traditional *certification* (leading to diplomas, professional certificates etc.) is typically and traditionally provided by public authorities, educational institutions, professional bodies, or through collective bargaining. Thus it is a concept identified with the recognition of formal education. It does not normally take into account the full range of an individual's personal and professional competencies.

> **Unlike formal certification, "validation" refers to the process of recognising a wider range of skills and competencies which people develop throughout their lives in different contexts, through education as well as through work and leisure activities. In order to make these implicit and partly invisible (tacit) competencies and skills more explicit and visible for individuals as well as enterprises, the acquired skills have to be identified and assessed.**

The validation process thus confers a value to assessed abilities (Liétard 1991). The acquired abilities have to be trusted in a professional as well as in a social context (legitimacy). "Validation" thus involves an assessment of the equivalence of recognised skills and competencies in relation to a defined standard of achievement. Colardyn (1994) points to the fact that the process of validation and assessment is often focused on those abilities which are transferable from one context (work, leisure, training etc.) to another.

3.2 The micro-level approach: The quality of the methodologies

Diversified approaches

The multitude of methodologies in the assessment of non-formal learning can partly be interpreted as a reflection of the growing number of countries involved, of the diversity of approaches, and as a reflection of the complexity of the processes involved.

- The French "*bilan de compétence*" (CEDEFOP 1997a, Perker/Ward 1994, 1996) distinguishes between a *preliminary* phase, intended to lead the candidate to define and analyse his or her needs; an *investigative* phase which should help the candidate to state his or her values, interests and aspirations, general and occupational knowledge, skills and aptitudes and identify motivation; and a *concluding* phase in the form of personal interviews where the aim is to review the results with the candidate.

- The British "*Accreditation of Prior learning*" (APL) differs from the "bilan" as it leads to the award of a formal recognition such as a diploma/certificate, or in the form of a partial recognition (relative to the NVQ or SVQ-system). The procedure (CEDEFOP 1994/1996) starts with

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9) This complexity is of course dramatically increased when taking into consideration the different languages being used. The French "*validation*" has a strong meaning, referring to "a stamp" or "approval" from the State, linking validation to the formal rather than the non-formal domain. The French *evaluation*, the English *assessment* and the German *Bewertung* are more appropriate, not so strongly linking to the formal certification systems. The final "results" of these processes can be described through concepts like the English *recognition*, the German *Anerkennung* and the French *reconnaissance*.
Irrespective of whether *validation or assessment* is used, a question remains as to the use of the term *non-formal* or informal. The English term "*informal*" is used to describe something "irregular, without ceremony or formality". Non-formal learning, understood as "learning by doing", "learning by using", "tacit learning", must of course be reflected by the new methodologies and systems. But in addition, the approaches to learning introduced to work organisations (regarding job instruction, structured team-work, quality management etc.) and elsewhere, must be focused upon. This last category is far from being irregular and casual, but still does not receive the same formal recognition as learning within educational institutions. In this way, the term "*non-formal" learning* includes both the casual and the non-casual (planned) forms of learning.

general information about the APL process. In a succeeding session the candidate - assisted by a mentor - has to reflect on his or her experience, relevant skills and knowledge. Finally, the candidate's portfolio is assessed by an assessor who may interview the candidate and may ask questions to test the candidate's understanding of the work.

- The central element of the Dutch *assessment approach* (Bom/Klarus/Nieskens 1997), currently under testing in different sectors, is a predefined task, carried out in an actual or simulated situation. The central elements of the competence in question have to be represented in the task, thus allowing the candidate to show if he or she actually commands the necessary skills in a realistic context. Upon completion of the task, the candidate must reflect on how the task was performed and how other tasks within the same domain could have been solved by the same or related methodologies and approaches.

These examples show that a combination of *interviews, diagnostic assessments, self-assessments* and *tests* are used in assessing knowledge. Most commonly, the approaches may lead to a portfolio or a certificate. The French, British and Dutch examples are oriented towards guided processes, using dialogue as an inherent approach in the assessment process. The same can be said of several other approaches such as the Irish, Australian and Canadian examples (CEDEFOP 1997a).

To balance the dialogue and to use self-assessment (and self-understanding) as a way to improve the quality of the assessment process, seems to be basic. They also seem to recognise the individual and context-specific character of the learning being assessed.

These dialogue and guidance-based approaches are contrasted by *electronically-based expert systems* proposed, among else, for reasons of costs, capacity and neutrality or objectivity.

This work has been conducted on a sectoral as well as on a national (e.g. Ireland, France and the UK) and European level. Currently, most support towards the development of electronically-based expert systems comes from the European Union. One of the central objectives of a "*European Skill Accreditation System*" (1996) is to give everybody the possibility of having their skills assessed and documented in a Personal Skills Card (PSC). Electronic tools and expert systems made universally accessible through the Internet are of crucial importance to this initiative.

> **However, this requires the identification of a number of "knowledge areas" to assess on a European level. Although it is acknowledged that there is no fixed list of knowledge and skills areas which could be tested at a European level, the subject should be well established and not subject to major doctrinal controversies.**

The following types of knowledge are distinguished in the PSC: *core knowledge areas*, like mathematics, sciences, informatics, geography, foreign languages; *vocational and technical skills* like marketing, business management techniques, accounting; and *key skills* related to logistics, organisational techniques, communication, decision making abilities, risk management abilities, negotiating and interpersonal skills.

As the system eventually gains recognition, the skills card would complement paper qualifications and become real passports to employment. The idea of a PSC is currently being followed up through a series of transnational projects (European Commission 1997h).

Conceptions of knowledge and learning

The methodologies used in the British APL system, according to O'Grady (1991), can be evaluated by their *validity/reliability* and *acceptability/credibility*. The concepts of acceptability and credibility are closely related to the (social) value and status attributed to the assessment results. The somewhat broader concept of *legitimacy* will be used here in order to approach these aspects (see chapter 3.3). As to the concepts of validity and reliability, these will serve as starting points for a discussion whether methodologies are able to assess and validate what they are supposed to do.

Validity refers to the degree to which test scores predict some practical criterion for example those defined by the British NVQ standards (O'Grady 1991). It is a measure of the degree to which the assessor's decision in respect of an individual's evidence accurately reflects that individual's level of competence.

> *Reliability*, also according to O'Grady, is a measure of the degree to which a candidate presenting his or her portfolio of evidence will get the same results irrespective of when, where or by whom he or she is assessed.
>
> Both validity and reliability thus reflect the quality of the assessment process.

Research on traditional examinations (Kvale 1972, 1977, 1980, 1993; Fredriksen 1984) gives us important clues as to the basic problem of increasing validity and reliability of validation and assessment. Both within psychology and sociology, statistically-based research on the validity and reliability of formal validation and examination processes has been conducted as *psychometric tests*.

It may be argued that the problems of validity and reliability in traditional, formal examinations, will be even more serious in the field of assessment and validation of non-formal learning. Here, learning paths are more individual and knowledge is, in principle, situated (Lave/Wenger 1991) and context-bound. The question of how to improve validity and reliability cannot be answered without asking: what kind of knowledge concept are we basing our discussion of validity and reliability on?

Three different kinds of knowledge are identified (Kvale 1993).

- The *dogmatic form* of knowledge, for example, that by God or some other divine authority, will not be part of this discussion.

- The *objectivistic form* of knowledge consists of objective facts (true or false; cf. Habermas 1981a, p. 384) with logical rules for combining them. In this "paradigm", the questions of validity and reliability can be viewed as a pure technical and/or instrumental question, in finding the best methodology for deciding on what is true and what is false knowledge. Assessment could be, for example, based on multiple choice tests, thus improving validity as well as reliability.

- *Normative or socially created and defined knowledge* is situated and context-bound, and should be evaluated through the question of whether it is *accepted* or not (Habermas 1981a, p. 439). The normative perspective which is also to label as "hermeneutic", requires a more open approach. The focus must be changed from the (objective and delimited) learning product to the learning process. Since a certain level of judging is necessary, this may be interpreted as a subjectivistic approach. Finally, it is of course also a situated approach in the sense that learning is context-bound, and has to be assessed as such. Some of the approaches presented above (the French and the British cases) may be interpreted as relating to the more hermeneutic understanding, using dialogue as an important tool.

> **The distinction between objectivistic knowledge on the one hand, and normative/social (or subjectivistic) knowledge on the other, is basic in order to understand the methodological problems associated with the assessment of non-formal learning. These two conceptions - positivistic and hermeneutic approaches - are implicit in the actually developing methodologies. The implications of choosing one or another of the conceptions may be profound.**

The *positivistic conception* of knowledge is clearly present in the European Commission approach towards electronically-based expert systems. The idea of a Personal Skills Card is strongly linked to the identification of areas of "non-disputable", objective knowledge, thus allowing non-biased assessment.

In spite of this, the *normative or situated conception* seems to be the dominant one, underpinning the approaches of several countries. Thus, the third element in the Dutch experiment, where the candidate has to "reflect" on the task, is an interesting example of this. In this perspective, knowledge is not "given", but is something which can be adjusted to a vast area of new situations. Its *transferability* and adjustability represent the core of the learning process and knowledge product.

The objectives "behind" the new assessment methodologies are to increase the visibility of the learning which takes place outside formal education and training, and to account for the important hidden or tacit learning taking place at home, at work etc. In this way, efforts to increase validity and reliability make little sense if not combined with a proper *understanding* of the learning processes in question, and the different forms of knowledge addressed.

> **This does not mean that assessment methodologies should choose between the different conceptions of learning, rather, they have to consider their own limits as to the assessment of different forms of learning processes and learning results. A consequence of this might be that combinations of methodologies be developed, as we have already seen in some countries. In this way, systems would be ready to assess objectivistic as well as socially situated learning.**

In search of criteria for assessing learning

The conceptual division elaborated above will serve as a basis for discussion on how to improve the quality of the assessments, the choice of criteria as well as their use.

Political requirements

The new approaches to assess non-formal learning are based on a changing political focus, emphasising the importance of learning in a competitive and changing world.

In the White Paper on Teaching and Learning of the European Commission (1995a, p. 13), this focus is clearly expressed:

"In today's world, knowledge in the broad sense can be defined as an acquired body of fundamental and technical knowledge, allied to social skills. It is the balance of this knowledge acquired through the formal education system, in the family, on the job and through various information networks, which make in the broad and transferable body of knowledge which is most favourable to employment."

Based on this, the assessment of learning (of which the Personal Skills Card is one of the important elements) should consider three different knowledge areas: Firstly, *basic knowledge* (languages, writing and reading, mathematics etc.) as the domain of the formal education and training system; secondly, *technical knowledge* relating to occupations, and thirdly, *interpersonal skills*, regarding the ability to co-operate and work as part of a team, creativity and the quest for quality.

This points to the fact that full mastery of this last kind of skills can only be acquired in the working environment and therefore mainly on the job. The employability of a person and his or her ability to adapt and change is, accordingly, connected to his or her ability to combine basic, technical and social skills.

The message of the White Paper and of a number of national policy documents of recent years[10] is that the countries in question need *a broader knowledge base*, balancing the three elements mentioned above: basic, technical and social skills.

The guided and dialogue-oriented approaches developed in countries like France, the UK, Ireland and the Netherlands seem, at least to some extent, to reflect the complexity and contextuality of a new and broader perception of learning and knowledge. In contrast to this, the approach outlined regarding the European Skills Accreditation System (op.cit.) is, in a peculiar way, in opposition to these broader concepts. By underlining the importance of leaving as little room as possible for individual, national and cultural subjectivity this follow-up to the White Paper suggests an approach which avoids the broader concept of learning and knowledge.

> **In spite of the concern for cost, capacity and neutrality, underpinning the development of standardised methodologies, the explicit focus on the broad knowledge base must be taken into consideration. Effort should be directed into a systematic elaboration of assessment criteria, which are able to deal with the situated and unique character of learning. To some extent we speak about the need to increase the transparency of the processes: which criteria are used, when and how are they used.**

Criteria for dealing with non-formal learning

O'Grady (1991) has addressed the question of how to improve the methodologies of assessment by asking how to improve validity and reliability. Using Caudill (1990) and her methodology for making decisions on the basis of "imprecise information" ("fuzzy decision-making"), O'Grady points out that decisions are normally made on the basis of judgements and relative to the evidence given by the individual and the context in question. In order to arrive at a reasonable level of validity and reliability, those judgements have to be related to some pre-defined standards, allowing as systematic and predictable (reliable) an assessment as possible.

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[10] A good example of this is the Swedish system SOU (1992).

O'Grady (with regard to the UK situation) suggests that factors of evidence[11] are:

- *authenticity*, i.e. whether the presented evidence is an accurate reflection of the factual skills;
- *actuality*, i.e. whether learning is "up-date" or not;
- *relevance*, i.e. the relation between the presented evidence and the standard it is meant to represent;
- *quantity*, i.e. the length of experience in the area assessed;
- *variety* of situations and contexts in which a certain skill has been used.

These criteria are closely linked to the existence of a predefined system of vocational qualifications (NVQ or SVQ). The same applies to the Dutch case, where a national system of predefined qualifications has been developed in recent years. Researchers evaluating the British NVQ-system are concerned about the quality of the standards themselves, indicating that they are too narrow and rigid and fail to identify and assess the broad learning that takes place outside formal education and training (Wolf 1997).

The elements of evidence used by O'Grady as well as Bom et. al. (1997) thus should be supplemented by criteria reflecting the basic logic of experiential and non-formal learning.

The logic of non-formal learning

The logic of non-formal learning can be analysed according to three analytical constructions. Firstly, through the conception of *learning as situated practice*, formulated by Lave/Wenger (1991); secondly through the *skills-stage theory* developed by Dreyfus/Dreyfus (1986), describing the elements integral to the transition from novice to expert. Thirdly, the picture will be "completed" by using Engeströms (1993, 1996) critical elaboration of the situated, practice-oriented approach, underlining the distinction between *learning as reproduction and learning as transformation*. This last perspective is important in order to be able to understand the innovatory potential of non-formal learning.

All the three approaches share the basic notion that learning and knowledge formation cannot be judged exclusively on the basis of objectivistic criteria, but have to be understood according to the social situation and the social context where it occurs. By bringing these perspectives together, the logic of non-formal learning will hopefully become more transparent, thus providing a basis for the development of assessment criteria.

(1) Lave/Wenger (1991) point to the fact that learning is frequently conceived as a process by which the learner internalises knowledge, whether "discovered", "transmitted" from others, or "experienced in interaction" with others. By introducing the term "legitimate peripheral participation", they have articulated an alternative perspective on learning, providing a potentially better basis for understanding and identifying the various aspects of learning and knowledge formation.

The core elements of the approach are the following:

This approach focuses not only on the *relational character* of learning, but also on its *negotiated character* and the *concerned and engaged* nature of learning activities. The individual learner is not gaining a discrete body of abstract knowledge which he or she will then transport and reapply in later contexts. Instead, he or she acquires the skill to perform, by actually engaging in the process. A skilful learner acquires the ability to play various roles in various fields of participation. This involves the ability to anticipate, a sense of what can possibly occur within specified contexts (Hanks 1991). Mastery involves timing of actions relative to changing circumstances: the ability to improvise.

> **On the basis of a number of case studies of apprenticeship, Lave and Wenger conclude that the practise of the community creates the potential "curriculum" in the broadest sense - that which may be learned by newcomers.**

The distinction between non-formal and formal learning is articulated through the distinction between a learning curriculum and a teaching curriculum.

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11) Bom/Klarus/Nieskens (1997) have used these evidence factors as a basis for the Dutch system now being tested, combining them with the core evidence being used in the portfolio process.

Five stages of skill acquisition

Skill level	Components	Skill acquisition	Perspective	Decision	Commitment
Novice	Context-free	Recognition of objective facts; acquiring of rules for action; delimited knowledge	None	Analytical	Detached
Advanced beginner	Context-free and situational	Experience through practical situations	None	Analytical	Detached
Competent	Context-free and situational	Adopting procedures of decision making; choosing own plans	Chosen	Analytical	Detached understanding and deciding. Involved in outcome
Proficient	Context-free and situational	Intuitive understanding based on similar experiences; analytical procedure	Experienced	Analytical	Involved understanding. Detached deciding
Expert	Context-free and situational	Mature and practised understanding;	Experienced	Intuitive	Involved

Source: Dreyfus & Dreyfus 1986: 51

A *learning curriculum* consists of situated opportunities for the improvisational development of new practises (Lave 1989). It is not something which can be considered in isolation or analysed apart from the social relations that shape participation. A *teaching curriculum*, in contrast, is constructed for the instruction of newcomers, the meaning of what should be learned is mediated through an instructor's participation, by an external view of what knowing is about.

Returning to the challenge of assessing non-formal learning, the change in perspective suggested above is consequential. If the challenge of assessment relates to the learning curriculum, the task is more complex, but on the other hand closer to the characteristics of the "broad knowledge base", referred to earlier in this chapter.

(2) The approach of Dreyfus/Dreyfus (1986) can be used to identify and clarify some of the characteristics inherent in the process of situated learning, formulated as five steps from novice to expert *(box)*.

The *novice* is able to recognise various objective facts and features relevant to the skill in question, and to acquire rules for determining actions based on these facts and features. At this stage, the elements of knowledge are fragmentary and not related to the context, neither are the rules governing action.

After having proceeded through further steps, the *expert* generally knows what to do based on mature and practised understanding. Deeply involved in coping with the environment, however, he or she does not perceive problems in a detached way, when things are proceeding normally. Experts, in this definition, do not solve problems and do not make unusual decisions, they do what normally works.

Neither Dreyfus/Dreyfus nor Lave/Wenger are ignorant of the fact that learning can also be a process whereby new knowledge is created. Their approach increases our understanding of how newcomers move towards full participation in the community of practise, but is less related to the *renewal and innovative potential of knowledge*.

(3) Engeström (1993, 1996) addresses this problem by introducing the distinction between *learning as reproduction* and *learning as expansion*. The question is what kind of learning is required to cope with challenges in complex and ever changing environments? Routine practises are often accompanied by learning that may be described as reproductive: aiming at the socialisation in and the reproduction of existing practises.

The focus of Lave and Wenger on adopting existing practises can also be viewed as something negative, especially if the existing way of thinking and acting is a barrier to improving a practise. Too strong an emphasis on reproductive learning may lead to a situation where the practitioners take their practises as given and try to do things exactly the same way as before. These kinds of strategies may, in the long run, prove negative.

Engeström has developed the notion of learning as expansion through the conception of an *expansive cycle*. The expansive cycle begins with the individual questioning the accepted practise, and is gradually expanded into a collective movement. Engeström points to the fact that an important part of all learning and finding solutions to problems is related to the *initial understanding and definition* of the problem to be solved.

In an organisational setting, Engeström divides the expansive model into seven stages, starting with questioning, criticising and rejecting some aspects of accepted practise, and ending with reflecting and evaluating the process of problem-solving and consolidating it into a new stable form. An interesting parallel to this model is the one presented by Nonaka and Takeuchi (1995), which attempt to use the concepts of tacit and explicit knowledge in order to understand knowledge creation and innovation.

The contributions presented above can be looked upon as ways of clarifying the somewhat vague conception of a "broad knowledge base" as introduced in recent political documents. In this context, their contribution is double: while underlining the complexity of the matter, they also illustrate, on the basis of the key-processes described, possible starting points for the development of assessment criteria.

From research perspectives to assessment criteria

The operationalisation of research perspectives into practical assessment requires compromises between what is possible and what is consistent. The following distinctions may represent a starting point for an integration of research and practise with the overall objective to improve current methodologies.

Different modes of learning can be made visible through Lave and Wenger's distinction between the teaching and the learning curriculum. This distinction clarifies the difference between learning through (external) instruction and learning through participation.

Each mode of learning, by teaching/instruction or through participation, can be made visible through a systematic and guided description of (i) *the context in question*, (ii) *the participation actually having taken place* and within this context (iii) *the identifiable tasks* being conducted.

A checklist proposed by Bjørnåvold (1997a) defines these three elements which could be developed in order to identify central characteristics of the learning processes.

3.3 The macro-level approach: the legitimacy of assessment

O'Grady (1991) is of the opinion that sufficient methodological quality - validity and reliability - will make individuals, enterprises and public authorities accept the assessments being made. This is, in our view, questionable. The value of an assessment (in the labour market, in educational institutions and in society in general) and the acceptance of non-formal learning is not only a question of their *legal status*, but also of their *social legitimacy*.[12] The aspect of legitimation has so far received limited attention from researchers on the topic of assessment.

Measuring what people know

Assessing non-formal learning can be elaborated from a number of disciplinary perspectives. Millar (1996) provides an interesting *human capital*[13] *approach* to the question of assessing learning and knowledge. His discussion of how to establish recognised and secure mechanisms for the accounting of human capital assets in the enterprise as well as in the public domain, is closely related to the question of how to establish legitimate methodologies and systems for the assessment of non-formal learning.

Due to fundamental changes in the economic structures of industrialised countries, the need for recognised accounting and assessment mechanisms is, according to Millar, due to increase. So far, regardless of the growing importance of knowledge in the economy and in spite of a vast research interest in accounting questions, comparatively little has been achieved as to the measurement and pricing of human capital (Drake 1997).

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12) We prefer to use the concept of legitimacy instead of O'Grady's acceptability/credibility. The concept of legitimacy has traditionally been related to Max Weber's classical typologies of legitimate authority; legitimacy based on tradition, charisma and rationality. Today's debate is more focused on the relationship between authority and normative agreement (Habermas 1981, Held 1987).

13) Human capital is defined as the knowledge that individuals acquire during their lives in order to produce goods, services and ideas. The source of knowledge acquisition (formal or non-formal, family, school, job or leisure) is ignored, as is the specific nature of the knowledge and the method for validating or certifying it.

Discussions on reporting and accounting of human capital as an asset seem to run into two immediate obstacles. First, most current certificate-based measures of human capital are deemed inaccurate or exclusive to the firm and therefore inadequate for assessing productive potential. Then, secondly, without adequate measures of acquired competence, there is little incentive for individuals or firms to collect or develop high quality human capital information.

Thus, the absence of efficient and accurate systems for validating the productive competency of human capital undermines efforts to engage in financial accounting and reporting of such assets. And, without practical recognition of human capital as an asset there is little incentive to establish even inexpensive systems for the identification (OECD 1996e).

Millar is of the opinion that it is possible to overcome the theoretical and methodological problems related to accounting for intangible assets. And in some respects, the conditions for arriving at such a mechanism are improving. Several researchers (CEDEFOP 1997a, Drake 1997, Müller-Solger 1996) have noted a general trend towards the strengthening of the institutional and regulatory preconditions for the assessment and accounting of learning and knowledge on the individual and enterprise level as well as on government level (cf. also the objective 5 of the European Commission's White Paper, 1995a).

Institutional design and legitimacy

However, and as already stated, such methodologies and systems require a legitimate basis, and the State has to play a decisive role in this respect (Millar 1996).

A primary option for the State in order to encourage more effective systems is to define and establish "collective parameters" and guard the general interest when it comes to defining competencies, assessment methods and recording conventions. To undertake this regulatory tasks, institutions have to be simultaneously *included* and *decentralised*, based on a *common, general framework*.

Millar is using a CEDEFOP report, dealing with the "Social Dialogue" (1987), to underline the prerequisites for such a (seemingly conflicting) combination of objectives. The report says:

> "While observing the necessary flexibility and job mobility, more importance has to be attached to the definition and necessary demarcation of jobs... It can only be successfully guaranteed, however, by including the various interest groups. Such a definition cannot be prescribed by legislature alone. It must be accomplished by compromise among the various groups, which do indeed have highly conflicting interests. ...without local control and without the assistance of those involved and their representative organisations, i.e. in particular without the co-operation of the workforce, it would hardly be possible to develop an adequate policy in the area of vocational and continuing training, which would be able to satisfy the demands of a highly developed society." (p. 93)

Thus, the role of the state should not consist in dictating the framework and the guidelines for the new methodologies and systems. Rather, its role has to be understood as a careful orchestrating of different groups and interests through a conscious design of legitimate information channels and institutions.

A number of recent contributions within political science (Eriksen 1993, Elster 1992, Kettner 1993) have focused on the relationship between institutional design and *legitimacy*, and may be of use for our understanding of the legitimacy of the new assessment methodologies and systems. If this understanding is correct, the design of institutions may thus be of critical importance to the decisions or validations.

The following criteria should at least be satisfied (Eriksen 1993):

- all relevant participants must be heard and must acknowledge their own interests;
- all relevant information must be delivered;
- the different interests represented and acknowledged should be balanced and the abuse of power should be sanctioned.

In this perspective, institutional design is about balancing and co-ordinating existing positions and given objectives in a way that is generally accepted (Eriksen 1993). However, many institutions have to develop goals and to (gradually) arrive at a common understanding. This is basic to innovative activity, and also to democratic institutions trying to interpret and define changing values and needs. In these cases, the process of *deliberation* has to be built into the institution.[14]

Some writers have described these different approaches through the distinction between "instrumental" and "communicative" designs of institutions (Eriksen 1993, Habermas 1994). Others (Bjørnavold/Hernes 1992) have described this as a distinction between "closed" ("closed" in the sense that existing objectives and positions are given) and "open" institutional approaches ("open" in the sense that it is open for deliberation).

Because the legitimacy of the new forms of validation depends on a *mutual* recognition of basic objectives and standards, the institutional form should support a mutual deliberation. According to Colardyn (1996), existing criteria for qualifications/skills have to be reflected and integrated into the system on a permanent basis.

> **This implies that the formal education and training system as well as enterprises have to be represented and allowed to express their views and specific interests and that the social partners must participate in the system on a permanent basis. The legitimacy of the system would be seriously affected if an imbalance of interests should be suspected.**

Apart from these dimensions, reflection should be given to the question of *centralised versus decentralised approaches*. A centralised system may be viewed as more trustworthy in the sense that it is more homogenous and coherent. A decentralised system may, on the other hand, be viewed as trustworthy in the sense that the flow of information is more effective and organised on the basis of detailed knowledge of participants and their needs.

3.5 Conclusions

As this chapter has illustrated, assessment of non-formal learning is so far an area that has received limited attention from researchers. The majority of contributions consist of descriptions or comparisons of the methodologies and systems being established so far; relatively few contributions deal with the more basic questions related to the quality of the methodologies and the legitimacy of the institutions.

The discussion of the legitimacy of the new methodologies and systems for assessing non-formal learning, as well as accounting human capital assets, is still in its infancy and may be characterised as embryonic. This includes the political debate as well as the debate among researchers. This may also be a reflection of a dominating perspective on objective learning and knowledge formation. This obscures the fact that an important part of knowledge formation is closely related to social processes, the value of the knowledge being intrinsically related to the social acceptance or non-acceptance.

The politically defined objective to increase the value of learning taking place outside formal education and training has to take this social character of knowledge into consideration: We do not talk of a technical integration of objective knowledge elements. Rather, we talk of a social re-definition of what is valuable and non-valuable knowledge. This is why the question of legitimacy of institutions ought to be a central topic for researchers as well as politicians.

However, and as we have tried to show, "neighbouring" research may be of value in order to improve the understanding of new methodologies and systems. On the basis of these contributions, the conclusion of this chapter could be formulated in two questions, indicating two main directions to be followed by research and policy in the time to come:

> Are the *methodologies* currently being set up able to assess and measure what they are supposed to assess and measure?

> Are the *systems and institutions* currently being set up designed to support the social re-definition of what is valuable and non-valuable, valid and non-valid learning and knowledge?

These two questions may serve as focal points for multi-disciplinary research effort. As illustrated above, different disciplinary approaches - from (social) psychology to human capital accounting - may add important perspectives to a topic and field of increasing importance.

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[14] On the topic of deliberation, Aristoteles (1987, p. 77) says: "Deliberation occurs in cases which fall under a general rule, if it is uncertain what the issue will be, and in cases which do not admit of an absolute decision." Eriksen (1995, p. 17) adds: "In a democratic setting it is basic that decisions should be qualified. They should not only reflect the pleasure of those in power … arguments should be decisive, and it is this argumentative process which constitutes democracy."

Part Five

Comparison, Mobility and Recognition of Skills

This section focuses on three subjects from the wealth of transnational European aspects: comparative research in VET, transnational mobility and labour force migration in the EU and a review of the activities concerning recognition and transparency of skills in the European Union.

Comparative research in VET has switched its focus from more descriptive comparisons of facts and figures to a more comprehensive understanding of the similarities and the relations between the categories of comparison along the lines of a hermeneutic approach. Analytical-empirical comparative studies are still dominant. All the same, they are increasingly including the social and cultural background.

The mobility of labour in the EU is still on a low scale and we do not yet know whether we will see any increase in the future. The harmonisation of standards of living in the EU may have contributed to this as may the material and non-material costs as well as real continuing obstacles to mobility. Mobility in international companies and frontier mobility have increased. However, there is very little information available on this.

Activities on the transnational exchange of trainees - supported by numerous EU programmes – have been rather successful. However, too little effort has been invested so far in their assessment and evaluation. The same applies to the assessment of quality and to the longer term effects on training and employment patterns.

One of the most important preconditions for mobility is the recognition and transparency of skills in the EU. Activities in the seventies and eighties concerning the correspondence of vocational certificates have given way to a supportive role of the European Commission in the promoting of collaboration on more qualitative aspects of VET. These include the elaboration of individual portfolios, networks of qualification data banks and the establishment of information reference centres. Current activities have to do with the accreditation of non-formal learning, the validation of achievements and late qualifications.

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1 Comparative research in VET[1]

1.1 Why comparative research?

The structural change in the industrialised countries requires the preparedness of VET systems to cope with the new challenges. In this context, the Study Group on Education and Training, based on the White Paper of the European Commission on "Teaching and Learning" (1995a), also underlines the importance of Comparative Research in VET for the further development of education and training systems:

"Devise common methods for the evaluation of education and training based on experiences in national levels, in order to benefit from a comparative dimension, evaluation must aim for comparisons over space and time of education and training outcomes. Therefore precise definition of what is to be evaluated, and criteria by which this is to be evaluated, is essential. In particular evaluation should focus on learning outcomes: what have pupils learned? However, evaluation must also take account of the effects of environment context, evaluation should neither inhibit nor punish." (European Commission 1997d, p. 137)

Due to the strong international interdependence, comparative research in VET serves as a stimulus for system reforms. The problems of international comparisons on macro-, meso- and micro-level, based on quantitative and/or qualitative data, have been discussed in detail in the literature (cf. for example, Lauterbach/Mitter 1994). Statistical data from different countries - whose accuracy is not doubted here[2] - are often compared without analysing the objects and categories used, and - what is more important - the relationships between them. One example is the unspecified addition of general and vocational (including apprenticeship) education and training without sufficient knowledge of the VET systems (OECD 1997; Barber 1974).

> **Already the selection and, more so, the interpretation of descriptive/statistical data contain the norms, valuations and structures embedded in the cultural and historical background of the countries or cultures to be compared.**

Popper (1971, p. 75 f.) remarks: "Thus, there is nothing absolute about the empirical basis of objective science; science does not build on rock; instead the cool construction of its theories towers over marshland ...".

The notion that facts explain themselves does not consider how they were generated. Misinterpretations are inherent in so-called "value-free" hypotheses as the basis for descriptions, analyses, juxtapositions and comparisons. Every researcher is limited in his perception and is prejudiced because of his individual paradigms about how the world is structured (Barber 1974).

The principal task of comparative research in VET should be to meet these misunderstandings by textual criticism and by constructing a basic methodological approach which does not deny cultural backgrounds and values.

Comparative research in VET has just started to develop. So far, the various comparative concepts have scarcely been reviewed. These deficits of comparative VET research are detrimental, given the constantly increasing political, economic and cultural interdependence at the supra-national level, in particular in the European Union.

1.2 Comparison as a basic principle

The research field

Comparative research in VET, as a part of Comparative Education, focuses mainly on the supra-national problems specific to training systems and their manifold aspects. It uses the theories and methodologies of history, philosophy and social science, but also has to incorporate or to accentuate other aspects that are not traditional subjects of Comparative Education.

Comparative Education is an academic discipline. The main interest of researchers in this field is to find out why education systems and processes in the broadest sense vary in their international development, how and under what conditions they operate, how they develop or why they may even converge.

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1) *This chapter is an extended summary of the contribution of U. Lauterbach and W. Mitter (1997): Theory and methodology of international comparisons (draft version).*

2) Although the deficiencies of national statistics on education and training are addressed in almost every empirical study.

> **Any comparison of systems and the specific functions of systems is an intercultural comparison. It is not statistical correlation alone that helps to gain an insight into systems but the far-reaching pre-understanding of the various historic, cultural and socio-economic interrelations in the various cultures. "Understanding and comprehending" thus cannot be established without a "hermeneutic contextualization".**

Robinsohn (1969) believes that intercultural comparison contributes to the transparency of one's own education system and helps to understand the principles and structures of one's system. Comparison also yields valuable information and knowledge about foreign education systems, thus contributing to understanding those systems.

Comparative research in education conducts studies with the focus primarily on education systems in the context of social, economic and political development. Sociological, psychological, economic and legal issues therefore play an important role.

International Education as a practice-oriented discipline takes up the findings of Comparative Education (Epstein 1994). In addition to research supporting individual projects, International Education focuses on the internationalisation of the educational process and on International or supra-national Organisations. It accompanies the processes of different actors, such as students, researchers and experts and those of facilitating organisations, such as the World Bank, ILO, OECD, UNESCO, European Commission.

Despite the view of Czycholl (1975) and Abel (1964), *comparative research in VET* is not a new academic discipline. But European integration and international co-operation in VET and the emergence of new topics led to its present significance.

Main issues of comparative VET research

Comparative VET research focuses on two systems of vocational training: initial VET and continuing vocational training (CVT). Not (yet) included here is the field of non-formal vocational training which is of growing importance in some EU countries (cf. Part Four).

The specific interest of comparative VET research should focus on topics such as the legal regulations and the freedom to set up a business, the mutual recognition of diplomas, examination certificates and other credentials, the transparency of qualifications, the special significance or performance of VET within society and labour market. In addition, questions of interest are comparisons on the structure and curricula of general vs. vocational education, or of public vs. enterprise training.

> **Comparative research in VET has to incorporate the labour market and other contextual conditions, e.g. social legislation and economic structure. Apart from that, system-related studies that identify general aspects of development and sharpen awareness of fundamental questions form the basis for problem-approach studies and for policy advice.**

Comparative research derives this multi-disciplinary network from comparative education with all its connecting lines. Given the interdependence between VET and the employment system, economics plays a dominant part as an adjacent discipline. Moreover, it has to take into account development and progress in the area of technological and engineering sciences, wherever curricular issues of vocational education are investigated.

Subjects of comparative research

Until recently, studies in comparative education focused on inter*national* comparison. This primary orientation refers to the historical fact that the formal education systems ("schools") of modern times are products of State policies. Changes on the political map have always had their impacts on norms and contents and, moreover, left their traces in the instruction and training methods and in the educational styles. Therefore "States" and "nations" play a prominent role in comparative studies and inquiries as basic parameters.[3]

Responding to social, political and cultural upheavals in the global, regional and national dimension and to their effects on education systems, comparative education research has broadened its epistemological and pragmatic interests into additional fields.

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[3] This may – at least as empirical statistical comparisons are concerned – also be due to the problem that statistical data below the State level do not always exist on specific issues.

On the one hand, attention has been given to non-formal and informal educational and training processes and, consequently, to subjects "below the State level": families, schools, local communities and regions. The peculiarity of vocational education can be extended to aspects of power and influence exercised by schools, firms and families on organisation and curriculum. Therefore the interrelation between "proximity" to and "distance" from the State can be identified as one focal comparative issue.

On the other hand, the erosion of the nation State and the world-wide migrations of the 20th century have resulted in the emergence of new multicultural societies whose members are marked by different ethnic, religious and/or social identities.

In this context, emphasis has to be laid upon the comprehensive range of culture, which should not be reduced to ethnic concerns, as is often practised in "multicultural" studies. This is why the educational problems of cultural units have become more and more relevant.

In comparative education these trends have led to the constitution of *intercultural comparison* alongside the international comparison. The topicality of intercultural comparisons is, moreover, reinforced by the formation of *cross-national regions*, linking them with the analysis of *interregional* comparisons. With regard to history, placement, workforce and production, comparative VET research has opened up a wide field of questions posed by the categories "industrial culture", "labour culture" and "firm culture", on the analogy of the "school culture".

Dimensions of comparative research

With regard to the dimensions of comparative analyses, a distinction can be made between two research approaches which were developed during the twentieth century. Until the fifties and sixties, comparative education was dominated by the drive for *total analysis*[4], related to national education systems in their historical frameworks. Since the sixties the growing consciousness of the impossibility of meeting such a far-reaching aim by means of empirical analysis or detailed textual interpretation has led to the *problem approach*, which has gained remarkably in importance.[5] Its main value for comparative education is to open the way to investigating *"functional equivalencies"* at various levels of education.

The basic focus of the problem-oriented approach is the macro-level of national or regional education systems, while the micro-level of educational practice has also become worth exploring to an increasing degree. Recently this became more and more topical with the growing significance of "autonomy" or "self-government" of decision-making at the level of local organisational units.

The diversification of the problem approach has been outweighed, however, by a certain revival of *total analysis*, caused, in comparative education, by the reception of approaches derived from system and evolution theories.[6] Comparative research in VET may be stimulated to pose new questions by the recent confrontation of universalistic (as demonstrated by the World Systems Theory) and cultural-pluralistic (as demonstrated by cultural anthropology) views.

New themes and projects may originate from the awareness that predictions about reasonable and optimal strategies in VET cannot be derived only from identifying "functional equivalencies" with all their instrumental limitations. They have to include responses which are necessarily rooted in the interpretation of culture-bound attitudes: to labour, profession, mobility, morality, etc.

Within such an approach the confrontation between universalism and cultural pluralism as the main forces for thinking and acting manifests itself in the tension between people's ability to respond to socio-economic challenges and their ties to "their" specific cultural frames of reference. Such reflection opens the way to both "international" and "intercultural" concepts.

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[4] This dimension can be exemplified by Hans' (1955) studies on "educational factors and traditions" and by Schneider's (1961) concept of "impulsive forces", both approaches related to national educational structures.

[5] Its most prominent representative is Holmes (1965) who made his elaborate studies on the basis of hypotheses which were derived from educational theories.

[6] In this context it is also worth referring again to Holmes (1981) who, in his late works, turned his attention to the analysis of comprehensive problems, and to the identification of "ideal-typical normative models" derived from his studies on Plato, John Dewey and Soviet education. He re-discovered the wider dimension of *total analysis*, though, in contrast to the aforementioned 'classical' comparative educationists, confining himself to testing the *probabilistic* and *epochal* conditions concerning the topicality of educational problems.

1.3 Methodological considerations

Seidenfaden (1966) established the thesis "that each scientific discipline in which the comparison is to be applied as a productive approach has to face specific problems resulting from the structure of the particular subjects of inquiry." (p. 14) This thesis refers to the fundamental interrelation between subject and method. Three decades before, Schneider (1931/32) had expressed doubts concerning the definition of comparative education, based upon the application of a *method* instead of a *subject* of knowledge and research.[7]

This retrospective example points, on the one hand, to a fundamental classificatory problem of comparative education and, consequently, of comparative research in VET and, on the other hand, to the continuous task of developing and refining the methodology by looking for stimulation and suggestions of neighbouring scientific disciplines. It is that fundamental interrelation between subject and method which all methodological considerations should refer to. Another task is identified by the aforementioned *multidisciplinary* nature of comparative education and comparative research in VET.

Categories of comparison

Every comparative inquiry must be rooted in the researcher's expertise of *base, process* and *aims* as the fundamental categories of comparison.

(1) The *base of comparison* is determined by the comparability of the subjects under consideration, as well as by the definition of "the common factor enabling comparison" (Seidenfaden 1966). This factor is called "*tertium comparationis*" and is derived from the subjects of comparison which - related to the existence of two subjects - are defined as "primum and secundum comparationis" (Eichberg 1972).

For comparisons, a categorial and thematic relation between the chosen subjects has to be established "aimed at equality (congruity), similarity (affinity) and diversity (discrepancy)" (Hilker 1962). Contrary to the popular assumption of "equality", comparability is dominated by topics suggesting "similarity" and also "diversity". The identification of the "tertium comparationis" lays the ground for the elaboration of comparative indicators, depending on the questions which are to be investigated.

(2) Regarding conceptualising and implementing as steps in the process of comparison, the scheme proposed by Hilker (1963), is considered as the "classic" patterns. Stages of comparison are:

- the *description* of the subjects of comparison, based upon empirical data and other sources;
- the *interpretation* of each subject in the framework of overall education as well as political, economic and historic/cultural conditions;
- the *juxtaposition* consisting of the descriptive and interpretative results of the preceding inquiries on the individual subjects;
- the (proper) *comparison* as the comparative interpretation of the inquiry on the whole.

This "classic" pattern has been gradually refined and replaced by classificatory models which improve the heuristic function of the comparison to a more stringent and precise degree (cf. Robinsohn 1973).

However, the classic pattern has survived in many comparative studies. In particular, comparative research is still dominated by juxtapositional descriptions in tabular form which is, above all, result of quantitative-empirical analyses.

(3) The third category is indicated by the aim of each comparative inquiry. It determines the progress and direction of the heuristic operation, whereby "explaining" and "understanding" can be considered as the focal variations.

> **The aim of comparison is rooted in the fundamental question of the degree to which the application of comparative methods opens the door to the generation of generalising theories and, moreover, permits predictions about "universal" trends of evolution, or even the identification of "laws" concerning the relations within education as well as between this system and the processes in society as a whole.**

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[7] It should be added that this issue also affected the "*Berufspädagogik*" (occupational pedagogics) in Germany in the sixties and seventies (Selzam 1968, Czycholl 1975).

On the one hand, reference has to be made to the trend analyses continually conducted by international and supranational organisations, such as UNESCO, OECD, the World Bank, the ILO, the Council of Europe and the European Commission. Furthermore, the aim of comparison has been increasingly stimulated by the question of the extent to which international and intercultural comparison can make a contribution to building theories on modernity and post-modernity with regard to their globalising trends. In particular, this question has been actualised by the stimulating impacts of the *World Systems Theory* referred to above.

On the other hand, comparative education is regarded as a research field open to *quasi-experimental* inquiries. This assumption can be traced back to Durkheim's thesis on the 'quasi-experimental function of comparison in the social sciences'.

> "A comparative study is, according to its function, an attempt at replacing the names of systems (countries) by indicators for concepts (variables) to a wide degree" (Noah 1971, pp. 507 ff.).

In the early seventies, Berstecher/Dieckmann (1970) actualised the contestable plausibility of evolutionist concepts in educational studies, particularly with their inherent statements about inevitable trends. Their arguments, reinforced by references to lacking data and indicators, are no less topical today, although recent efforts by the OECD and other international organisations and agencies signal some progress in overcoming existing deficits.

In this context it is worthwhile to refer to Hörner's classificatory model of "functions" to be allocated to comparative education. He distinguishes

a) the *idiographic* function (search for the specific),

(b) the *melioristic* function (search for better models),

(c) the *evolutionist* function (search for the trend of evolution),

(d) *quasi-experimental trend* (search for the universal).

While the melioristic function can be immediately derived from the practice-bound motivation underlying comparative research, the three other functions are closely connected with the place, allocated to comparative education by the comparative educationists as well as by their "neighbours" in the context of the science system.

Finally, the identification of the aim of comparison is closely related with the controversial question, to which extent comparative education can make its contribution to the improvement of education and schooling and offer provisions for the device of guidelines for actions. -

Main methodological approaches

The methodology of comparative education is rooted in the dualism of two main approaches which are embedded in science theory as well as in the history of education. They are defined by the concepts of *hermeneutics* and *empirical analysis*. The choice of one of these two approaches has distinct impacts on the conceptualisation and realisation of comparative studies.

The hermeneutic and phenomenological approach

The *hermeneutic approach* aims at "understanding" by means of interpreting "texts" and at a history-based perception of reality and ideas. In the comparative VET research, "texts" are primary sources, e.g. legal documents (bills, laws, decrees, curricula and syllabi, time-tables, etc.), didactic and methodical recommendations and guidelines as well as textbooks on the one hand and secondary literature, provided by various studies on VET and curriculum development on the other.

The hermeneutic approach is complemented by the *phenomenological approach*, derived from Husserl's philosophical school of phenomenology. Hermeneutics and phenomenology share their access to life situations both on the base of the scholars' own experience and their aspiration to "understand" them.

On the other hand they disagree with each other in that the hermeneutist relates to the historical background, while the phenomenologist's interest is focused on the holistic interpretation of every life situation including questions about the emotional sphere of human attitudes and actions. Already at this point the comment may be justified that the phenomenological approach can make noteworthy contributions to comparative education, whenever attitudinal issues are touched upon.

The analytical-empirical approach

It goes without saying that the *analytical-empirical approach* has become and still is the main methodology in Comparative Research in VET. Special attention has been attracted by the comparative projects of the International Association for the Evaluation of Educational Achievement (IEA)[8], which have been conducted since the sixties, focused on the assessment of subject-bound school achievements.

Their outcomes have been increasingly appreciated by national and international educational authorities. The various methodological schemes and measures have been gradually diversified and refined, which makes the IEA studies excellent models for empirical comparative research, both at the conceptual and instrumental level.

The analytical-empirical approach aims at "explaining" facts, relations and trends. At the beginning it concentrated on quantitative analyses of statistical data and the search for "regular co-variations" (Robinsohn). The progress of quantitative methods has been recently accompanied by the testing of qualitative methods with applications such as ethnographic inquiries and case studies.

While contributing to the diversification of the analytical-empirical approach, they also gave rise to the "re-discovery" of the hermeneutic and the phenomenological approach, which had been somewhat repressed in the past decades.

Comparative method

Since the beginning of the 1970s both approaches have been reconciled in so far as widespread acknowledgement concerning their legitimacy was reached. Berstecher (1974) stated that "metrics" and "hermeneutics" should be conceived as "elements of one and the same method" and should be subsumed to the "comparative method". Robinsohn characterises this method as a "combination of historical interpretation, functional analysis, quantitative data processing and utilisation and, finally, synthesising interpretation of the causes and the direction of a prospective or intended change" (Robinsohn 1973, p. 325).

Considering comparative educational inquiry in the concrete decision-making situation, the choice of *one* of the main methodological approaches is not at the researcher's "discretion", but is primarily dependent on the *aim of the intended comparison.*

Adapting this basic thesis to the comparative VET research entails the option for the generation of concepts, e.g. concerning the function of "profession" and "training" in the employment system, which is focused on the postulation of mobility, flexibility and globalisation. In many cases the concrete project suggests the consideration of several approaches, according to the aim of comparison.

Quantitative inquiries, however, will have to be enriched by qualitative empirical studies wherever the statistical data need to be complemented by findings resulting from observations of educational (or employment) situations and their documentation.

Beside the application or combination of the main approaches mentioned above, comparative education methodology is influenced by a number of alternative approaches (inductive/deductive concepts; relative and absolute comparisons; approaches of homology and analogy) which cannot be described here in detail.[9]

Proposals for a methodology of VET comparisons

For many researchers methodological questions have been only of marginal interest. Hence a lot of research results can be discussed even at the level of methods. The utilisation of such studies seems rather problematic without considering the underlying approaches of comparative research.

Lauterbach/Mitter (1997) propose the following procedure in order to establish a common methodology on comparative VET research:

1. constitution and explanation of comparative *classifications* and of the 'tertium comparationis'

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[8] For further information, see the list of networks in the annex.

[9] Cf. for details: Lauterbach/Mitter 1997. Attention should be paid to a procedure which is not a "method" as such, but has become important to comparative education. It is the so-called *implicit comparison* (Froese 1983, Mitter 1976). Its intention is not to engage in an explicit and systematised comparison but to implicitly relate findings on foreign subjects to the knowledge and experience of the expert's own national system or cultural environment.

concerning the aims and the basis of comparison;

2. description, development, relations, process and analysis of the *elements of the system;*
3. summarised parallel analysis of the *national elements* and macro-levels;
4. *juxtaposition* as a basis of comparison for important classificatory features (typologies, categories, modelling, trends of development, etc.). The importance has been explained under (1) and is of decisive significance for the formulation of the *tertium comparationis;*
5. *functional comparison* of different systems by comparative analysis;
6. developing specific *features* of individual systems by aspects transcending the context of individual systems (e.g. idiography, evolutional function, quasi-experimental function);
7. bundling the specific features to a *typology* and relating individual studies to this typology;
8. *comparison* of the national classificatory features worked out in the juxtaposition;
9. *conclusion* of results, megatrends, verification and *falsification* of hypotheses; theory development;
10. *policy advice and recommendation.*

1.4 Typology of comparative studies in VET

A distinction can be made between the following approaches:

- *Country studies* on defined areas of VET are delimited in a subject-specific manner in respect of a comparison goal and comparison interest and without the *tertium comperationis* being explicitly developed. The studies which are normally conducted by different authors vary considerably in respect of the quality referred to the subject and the depth and width of examination.

- In *synoptic presentations* or parallel country studies, often supplemented by comparative evaluative analyses, attempts are made to define and delimit areas of comparison normally without the explicit presentation and justification of the interest of comparison and the *tertium comparationis.*

- *Clustering studies* try to typify countries or regions according to certain criteria.[10] Before extensive comparison studies are undertaken, types and models of VET are established, sometimes with a classification of the national systems. In most cases the authors restrict themselves to a few concrete models in which the risk of stereotype or artefact formation is obvious (Georg 1997). This typificaton is not restricted to VET but is also used in general overviews of education. Vaniscotte (1996) distinguishes for example between Scandinavian, Anglo-Saxon, Germanic and Latin and Mediterranean types and classifies the education systems, including VET of the 15 Member States of the EU, using this somewhat rough classification.

- Different structures can be explained by the cultural specificities and the historical context. National systems of VET along the lines of the traditional system concept, which refers to a larger entity, do not exist in all countries. If, by contrast, reference is made to the *system concept* (Hörner 1996) which has established itself in the social sciences, internal and external links are the decisive features. The demarcations between the outside world and the functional links of the subsystems are described as a system.

- In a few cases, comparisons of structural elements or functional comparisons are conducted on the basis of an explicit methodology of comparison. Some of these advocate a *total neutral analysis* based on a reliable database, on documents and additional information provided by country experts (e.g. Lauterbach 1995/1997; Rothe 1995).

- Other researchers focus on functions and theories which place research in VET at the centre of their *problem approaches* in the full knowledge that total analyses are scarcely possible in a comprehensive form. Topical are theories e.g. of a link between education and employment, on VET funding, on the relationship between initial and continuing training and on transitions from VET to the labour market.[11]

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[10] For some of those criteria cf. also Part One, chapter 1.3.

[11] Several studies of this kind and referring to different aspects are discussed by Lauterbach/Mitter (1997).

Research scientists who work in the widest sense on comparison must face one fundamental difficulty which is the translation of the most important concepts and the description of the systems examined in another language. Therefore, specific terms should be left in the original language. These problems are also encountered in translations of documents on VET in the official languages of the EU.

1.5 Conclusions

In his analysis of the "state of the art", Heyneman (1993) emphasises the discrepancy between the growing need of political and economic actors for comparative research and a "gridlock of ideas". He decidedly favours research policies to be orientated to this need with regard to the choice of subjects, determination of aims and methodology.

This view entails the extension of the range of observation, within which activities of the "periphery" outside the research community (e.g. on the occasion of parliamentary committee sessions, bank conferences, meetings of boards, company marketing seminars, etc.) increasingly gain weight. Of course, national governments and administrations as well as international and supranational institutions, organisations and agencies are to be included in Heyneman's priority list. These all need to be considered as a stimulating appeal for Comparative Research in VET.

Confronted with Heyneman's interpretation of the "state of the art", universities and extra-university research institutes are challenged to break out of the "gridlock of ideas" and to engage in policy-oriented tasks (in the widest meaning of this term), which is already mirrored by a great number of research programmes and projects. This engagement is not only necessitated by their growing dependence on available financial resources, but also by claims raised by the members of the education systems: teachers, trainers and tutors, parents, administrators and, last but not least, pupils, students and trainees.

Beyond the criteria which are immediately related to its "basic strategies", comparative research in VET must continue to cope with issues concerning its thematic range. Beside the "classical" themes, new areas of research have become more and more relevant, such as continuing vocational training, the interdependence between VET and the employment system, the interrelation between vocational and higher education. Furthermore, issues concerning attitudes and socialisation processes of youth and adults and interdependencies among technology, culture and education and, in particular, multiculturality.[12]

2 Transnational mobility in Europe in the context of VET[13]

The discussion on transnational mobility in a VET context too often starts with the assumption that it is part of the discussion about mobility on the labour market in Europe. This is, however, only one aspect. Discussing transnational mobility in a VET context covers a wider range and is situated in a complex multidisciplinary field. In this chapter, we will try to give an overview of both the empirical data available and the research and development activities that have been conducted in this field.

We concentrate - after a brief discussion of labour-market mobility (see also chapter 3) - on the transnational mobility of students/apprentices in VET.

2.1 Labour-market mobility in Europe

Free movement of labour

It seems useful to start by looking at the issue of transnational mobility of workers in Europe. The advantages of a mobile labour force are, at first sight and from an economic point of view, evident: enterprises will avoid "bottleneck-situations" and (in particular: regional) unemployment should be alleviated if workers extend their job search to all of Europe.

The free movement of labour - mainly in an allocative view - was a central issue when the EEC was founded in 1957 with the signing of the Treaty of Rome, being one of the four cornerstones on which the "house of Europe" was built.[14] The Treaty demands "the abolition of any discrimination based on nationality between workers of the Member States as regards employment, remuneration, and other conditions of work and employment" (Article 48).

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12) CEDEFOP, jointly with the DIPF, in 1997/98 started an initiative on co-operation in the field of comparative VET research. A first conference was held in January 1998 (contact: O. Liljefelt, P. Kamarainen, B. Sellin, CEDEFOP; U. Lauterbach, DIPF).

13) *This chapter is a summary of the contribution of S. Kristensen (1997): Transnational mobility in the context of vocational education and training in Europe.*

14) The others being the free movement of capital, services and goods.

In Articles 49-51 of the Treaty of Rome, this statement is further substantiated in order to remove all technical barriers to transnational mobility by:

- *a close collaboration between the national labour-market authorities with a view to disseminating information about vacancies and about living and working conditions in general;*
- *the creation of a programme for the exchange of young workers between the Member States in order to clear away some of the mental barriers to mobility.*

It is worthwhile to see how these demands have been realised. As for the removal of *technical barriers* (i.e. difficulties with residence and work permit, social security, taxation, etc.) this has been largely accomplished over the years - a fact which is one of the major achievements of European integration.

In the area of *labour-market information*, a scheme for the systematic exchange of mobility-related labour-market information has been established (EURES - formerly SEDOC) which contains provisions for the announcement of vacancies, a large database on living and working conditions, and a network of "Euro-advisers". The former Young Workers' Exchange Programme operated as an independent programme from 1964 to 1992, incorporated in the PETRA programme; since 1995, it is part of the LEONARDO DA VINCI programme. In its over 30 years of existence many thousand young workers have benefited from a placement in another Member State.

Barriers to mobility

Despite these measures, however, the actual number of EU citizens working in a Member State other than their own is not very impressive (cf. also chapter 3).

There are several explanations why not more workers have used the possibility of job search inside the EU. Werner (1996) points out in what way developments in trade and industry inside the EU as well as the presence of the structural funds by and large have prevented a "prosperity gap", thus also preventing the push-pull factors of traditional migration theory to come into existence and to give rise to migration on a larger scale.[15]

Other determinants of low mobility are cultural and linguistic barriers, the still insufficient recognition of qualifications and the high unemployment in *all* Member States.

Werner concludes that there is no reason to expect any large scale labour force movements between the Member States in the future, but he identifies some areas where a limited increase in transnational mobility is likely. One is linked to the globalisation and internationalisation of companies and their deployment of staff in subsidiaries in other countries.

He sees the development of a stratum of "Euro-executives" - highly qualified, internationally mobile employees who are linguistically, technically and culturally flexible. Mobility here arises mostly in connection with multinational companies or supranational or international organisations posting staff abroad, a trend which is also confirmed by the OECD (1994d).

Another trend concerns the "Euro-regions" (border regions) where there are signs of an increase in frontier mobility, e.g. across the Franco-German border.[16]

Farla/Meijers (1995) attack the verbiage often surrounding the discussion on transnational mobility in VET and on the labour market and refute its relevance by drawing a parallel to the situation on the labour market in The Netherlands:

"Since internal borders are disappearing, it is expected that a single European employment market will come into being, which in turn will lead to increased mobility. This means that a transparent 'European qualification area' must be created, which in its most extreme interpretation would require a standardised European vocational training system. Everyone gets the same vocational training, which makes it possible to achieve optimum mobility. The

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15) According to Werner (pp. 7 f.), two factors come into play: firstly, the removal of trade barriers inside the EU has led to a situation where each country concentrates on producing the goods for which it has a comparative advantage (i.e. can produce more cheaply). Free trade relations will thus induce a division of labour in line with the comparative production advantages between countries, making labour migration unnecessary. Secondly, this situation of free trade and specialisation has produced less production displacements than assumed but has given rise to a diversification of products rather than a division of labour with the concomitant losses of production units and unemployment in whole regions or Member States.

16) The analysis based on the European Labour Force Survey refers to two characteristics: country of birth and country of residence. Thus frontier mobility is not included in the figures.

simplicity of this argument may be rather attractive ... but it probably does not bear much relation to the facts. Only better educated, better paid employees are prepared to move house within The Netherlands, and most less educated people are not prepared to move at all. Therefore, it seems unrealistic to expect cross-border mobility to be any different. The vast majority of employees will only consider emigrating (either temporarily or otherwise) in cases of extreme need (in particular once they have started a family)" (p. 28), or, as we should add, in case of unemployment.

These conclusions are by no means new and revolutionary and have been taken into account on political level. In the European Commission's yearbook "Employment in Europe" (1993), a passage on transnational mobility on the labour market ends:

"In practice the EC policies are based on the fact that capital movements rather than labour-market mobility are the most important instruments for evening out any imbalances. Mobility is more seen as a means to extend the career prospects of the individual regardless of his abode, rather than a regulatory mechanism on the labour market. ... Thus there are very convincing arguments against the desirability a massive migration of labour from the poor to the more affluent regions, not least because of the ensuing loss of income in the former and the extra pressure on the social and physical infrastructure in the latter which would normally be the result".

We may also draw an illustrative parallel to the Nordic countries (DK, N, S, FIN and Iceland) between which all technical barriers to mobility across borders were removed as early as 1954. In addition, the national labour-market authorities entered into close collaboration concerning the announcement of vacancies, and detailed information concerning living and working conditions have been made available to job seekers.

Since the mid-eighties, these efforts have been backed by the existence of exchange programmes for young people in initial vocational training (Nordplus Junior), young workers (Nordpraktik) and students in higher education (Nordplus) within the framework of the Nordic Council - an exact parallel to the situation in the EEC/EU. Moreover, the Nordic languages (Danish, Norwegian, Swedish) are mutually intelligible, and there are strong cultural bonds between the countries. Yet despite this closeness migration between the countries remained negligible.

The limited importance of transnational labour-market mobility in the past should not detract from its political importance as a symbol of a Europe without borders. If we continue to maintain that transnational mobility in VET is an important issue, however, and yields returns on the investments made, it is in the light of the above conclusions not appropriate to refer to it in terms of transnational labour-market mobility. This constitutes only one - perhaps a minor - function of the ensemble.

2.2 Transnational exchange in VET

Objectives

Bahl-Poulsen/Fahle (1995) remark in an assessment of placement[17] activities in the PETRA programme that transnational exchange in VET aims at:.

- enhancing vocational skills;
- developing transversal skills;
- increasing intercultural awareness;
- improving foreign language skills;
- stimulating transnational mobility and promoting young people's future prospects;
- enhancing the self-confidence of disadvantaged young people.

In the Green Paper of the European Commission "The Obstacles to Transnational Mobility" (1996a) the issues[18] are summarised as follows:

1. transfer of technology and know-how to enhance vocational skills;
2. development of international qualifications, including foreign language skills;
3. development of transversal skills;
4. importance for disadvantaged persons;
5. building a notion of European citizenship.

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[17] The term "placement" is used to refer to any type of transnational training or work experience involving students/apprentices in VET (with the exception of study tours, i.e. short visits of a maximum duration of 1-2 weeks). "Placement" thus includes both school-based and work placements in companies.

[18] Excluding that of the promotion of labour-market mobility.

Empirical background

Transnational mobility in VET can occur in two ways: either a young person on his or her own initiative crosses the border to take a full VET course in another Member State, or she/he spends a period of time abroad at a vocational school or in a work placement as an integral part of the native VET course. The impetus for mobility in the first situation in most cases comes from the student/apprentice himself ("spontaneous" mobility), whereas the second mostly deals with organised placements, in most cases within the framework of a general agreement between vocational schools and with support from the EU mobility programmes.

The number of persons "spontaneously" taking their VET course abroad is, however, marginal. The idea of the "free mover" is not very widespread in VET, as the difficulties concerning the recognition of qualifications and of periods spent abroad in most cases present an insurmountable barrier.

Mobility in VET is consequently an activity that primarily takes place within organised projects of the EU or within bilateral national programmes. Most of the stays consist in placements of a relatively short duration, mainly due to national legislation which makes it difficult or even impossible to recognise long-term placements as an integral part of a VET course.

Activities on the European level

Transnational mobility in VET is a recent phenomenon.[19] With the Treaty of Maastricht, transnational co-operation in VET became a legitimate area of concern for the EU; in the preceding years very little had happened either at the Community or at the national level. It is only with the advent of the PETRA, LINGUA and later the LEONARDO DA VINCI-programmes that a concerted effort in this field was made.[20]

When we are dealing with transnational mobility in VET, it is first and foremost the experience from these programme activities that we must rely on for our empirical data. This is not very much, and as it is such a relatively new phenomenon, much of the information is at present only available as raw figures concerning quantitative aspects. The programmes mentioned are those where the link VET/transnational mobility constitutes the main element.[21]

However, many of the EU activities have never been properly evaluated (the evaluation is mainly the task of the country concerned in these programmes).[22] An exception are evaluations of the PETRA programme (NICO 1994, Bahl-Poulsen/Fahle 1995). Additional empirical sources come from the European Commission.[23]

In addition to the EU initiatives, there are organisations that have been active in the field of youth exchange for a long time (e.g. AFS/Intercultura, Youth for Understanding, etc.), but their aims are more cultural ones than related to economy and training. In a more official setting we have the experiences of large and institutionalised organisations such as the Carl Duisberg Gesellschaft in Germany (founded 1949) and the Deutsch-Französisches Jugendwerk/Office Franco-Allemand pour la Jeunesse (founded 1962), where many bilateral exchange activities have taken place in a vocational context, but again with the specific aim of fostering friendship and collaboration across borders.

A substantial body of work on these aspects has also been done in the Council of Europe, which has launched a placement scheme similar to the Young Worker's Exchange Programme.[24] Lacking the necessary finances as well as the executive powers of the European Commission, the impact of these efforts has been limited. Concomitantly with post-Maastricht Community intervention in the field, a number of programmes on national level were established, e.g. the Dutch SESAM programme and the Danish PIU-programme.[25]

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[19] Despite the fact that it has historic roots going back to the "journeymen" ("fahrende Gesellen") of medieval times.

[20] For a description of these programmes, concerning mobility, cf. Kristensen 1997.

[21] There are, however, in addition to these, other programmes and Community initiatives where transnational mobility in a VET context play a role, albeit a minor one. These are in particular the Social Fund initiatives under the EMPLOYMENT umbrella (YOUTHSTART/EUROFORM, NOW, HORIZON), the ADAPT initiative, but also Objective 4 of the Social Fund itself. Many other EU schemes contain a mobility promoting action line; also the initiatives promoting cross-border regional development (INTERREG) may be of interest. The experiences gathered here in connection with transnational mobility, however, have never been evaluated independently, as it remains a side issue.

[22] For an evaluation of the ERASMUS programme (1987-1995, then integrated into the SOCRATES programme) concerning university students' and teachers' exchanges see Teichler/Maiworm 1997 and Kreitz/Teichler 1997.

[23] For details see Kristensen 1997.

[24] New European Journeymen Network, an initiative by the Standing Conference of Local and Regional Authorities of Europe.

To conclude this section, however, we can say that there are at present, because of its novelty, still many issues in relation to transnational mobility in VET that are not properly evaluated and thus authenticated; this refers especially to the long-term effect of placements and their impact on the subsequent career of the participants.

2.3 Mobility in VET: impacts and potential

It is taken for granted here that a learning process in relation to each of the issues mentioned above can be furthered by the experience of a transnational placement. There is, of course, a clear link between the duration of a placement and the degree of exposure to the native environment of the host country and the benefits of the stay.

Transfer of technology and know-how

The transfer issue is of considerable relevance to the discussion on mobility in VET, albeit with a shift in focus.[26] In an evaluation of the PETRA-programme (IKAB 1994) among former participants, the overwhelming majority (70 to 75%) considered the training they had received abroad to be "good", oriented towards future jobs, and on the whole very useful. These figures should, of course, be taken with a pinch of salt as they do not reveal whether they actually cover the acquisition of vocational skills, or whether they represent a general assessment of individual experience.

Looking at individual placement reports we find many examples where the transfer of technology/ know-how forms a prominent motivation. Thus, for example, for many students/ apprentices in the commercial areas, the outcome in terms of foreign language competency in their field of work and their knowledge of procedures, legal and administrative issues, etc. in the host country is of direct relevance to their future careers, and could not have been obtained to the same extent in their home country.

Development of international qualifications

In an era where international trade is increasing, where production processes are restructured and integrated, and where mergers, acquisitions, relocations and joint ventures across borders are the order of the day, the ability to act transnationally and to possess "international qualifications"[27] becomes a key qualification for large sections of the workforce, even if they will not actually move across borders. What is meant by "to act transnationally" varies by sector, company and position.

How relevant are these intercultural qualifications to the labour force in Europe? In some regions or Member States they are seen as essential due to the composition of the economy, in others (for example in Germany; cf. BIBB 1991) they are given less importance.

We may divide international qualifications into linguistic, intercultural and vocational competencies.

Vocational and linguistic competencies

Vocational and linguistic vocational competencies are concerned with specific vocational and language skills necessary within a profession in order to act transnationally. This could be knowledge of legal and administrative practices in other countries, of technical norms and specific terms, or in general a proven excellence in the chosen field.

Intercultural competencies

Whereas foreign language competency and vocational competency is relatively easy to deal with, intercultural competency is more diffuse and difficult to make operational. What does it mean to understand the mentalities and the cultures of people from other countries? We will define it as the ability to interact constructively with people of a different

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25) For further details see Kristensen 1997.

26) The issue, however, is relevant in connection with the placement activities in the framework of the LEONARDO (and formerly the COMETT programme) involving university students and companies dealing with high technology products.

27) This term is not the only one in circulation: others talk of "Euro-qualifications", "European key qualifications", "intercultural skills", etc. – terms that in principle denote the same. An overview of research and development in this area is found in Busse/Paul-Kohlhoff/Wordelmann (1996).

cultural background on the basis of a perception of differences and similarities in values and attitudes.

> Meyer (1992) defines three levels of cultural competency: the *"monocultural level"* which denotes the level where the person judges everything by the norms of his own culture; the *"intercultural level"* where the person can explain cultural differences based on specific knowledge he has acquired, and the *"transcultural level"* which applies to persons who are capable of acting competently in different cultural environments.

Development of transversal skills

Transversal skills are defined as not being tied to a particular trade, profession, sector or work process but are applicable across a wide range of situations in private as well as working life. The term covers many different skills, such as entrepreneurial skills, communicative skills, interpersonal skills as well as a number of other skills such as problem-solving skills, quality awareness, self-confidence, etc.

Many efforts were made in order to find methods of imparting those skills to young people (cf. also Part Four). A common understanding seems to emerge among educationalists that these competencies cannot be taught in the traditional way, but that it is necessary to create frameworks or learning environments in which they can be learned, transnational placement being a very effective one.[28] Staying abroad in a strange environment for some time may require and promote self-confidence and self-reliance, adaptability and risk-taking, communication skills, creativity and lateral thinking and initiative.

Mobility programmes for disadvantaged persons

The Council Decision governing the second phase of the PETRA programme claimed that the activities should "devote particular attention to young people at risk, including disabled and disadvantaged young people", a concern that is repeated in the LEONARDO programme. This offers opportunities to all citizens and not only to those who are in a position to seize and hold them on their own account. One of several reasons is that transnational mobility is also a pedagogical tool in the work with those groups, for most of whom transnational mobility is beyond the limit of their possibilities.

The issue of transnational experiences for disadvantaged groups has also received much attention in programmes other than those directly concerned with VET and mobility, for example in HELIOS (physically and mentally handicapped), NOW (women), HORIZON (groups threatened by social exclusion) and YOUTHSTART (young people with no or limited qualifications). The last three are initiatives under the Social Fund. The topic has also been prioritised in the YOUTH FOR EUROPE-programme in all its 3 phases.

2.4 Mobility in VET: obstacles and initiatives

The identification and subsequent removal of obstacles to mobility in VET has had a high priority on the EU agenda since the early nineties. The Green Paper of the European Commission (1996a), based on several studies on legal and administrative barriers to mobility and the problems of recognition/certification of skills, points to a number of obstacles where either a Community intervention or concerted action on national level can provide a solution.

Obstacles

The obstacles relevant in a VET context may be divided into two groups: those that make participation in transnational VET activities impossible (legal and administrative barriers), and those that make participation difficult (e.g. lack of recognition, linguistic and cultural barriers, etc.); examples are

- Unemployed lose the right to unemployment benefit if they participate in training courses in another Member State exceeding 3 months;
- Statutory problems for trainees and young people doing voluntary work;
- Territorial restriction of student grants;
- Lacking mutual recognition of vocational qualifications.

In addition to these, the Green Paper mentions a number of additional obstacles of a more practical nature, e.g. lack of funding for placement activities, of host companies for placements, etc.

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[28] For a further discussion see Kristensen/Wachter (1995)

Promotion of mobility

On the basis of the barriers identified, the paper proposes several actions to facilitate mobility within education, training and research which should give those persons, among other things, a specific status, social protection and funding, recognition of skills and improved information.

However, the incompatibility and variety of VET systems remains one of the main barriers, in particular concerning the *recognition of qualifications* (cf. chapter 4). Member States with an alternance-based VET system have a certain advantage, as training requirements for work placements are more flexible in terms of contents than theoretical courses.

Another approach is offered by transnational pilot-projects in PETRA and LEONARDO where a number of national or regional bodies with responsibility for curriculum development and accreditation (e.g. trade committees, *Industrie- und Handelskammer*, Training and Enterprise Councils, etc.) co-operate across borders to develop joint modules for elements of particular training courses.

Transparency

The *lack of information* on mobility-related issues is another important obstacle. The Green Paper mentions the need to coordinate information activities, and points to the existence of mobility-related information services and databases like EURES, ORTELIUS, EURODESK, CORDIS, NARIC and EURYDICE. Of these, only EURES and - to a limited extent - EURYDICE are useful in a VET context; the others being dedicated to higher education, research and youth matters.

The list is not exhaustive, however, and should be complemented referring to the National Resource Centres which were set up to facilitate the exchange of information between guidance and counselling institutions in Member States. In this connection (in the framework of the PETRA programme), the European Commission in 1992 published a "European Handbook for Guidance Counsellors" as a pilot version giving detailed information on mobility-related issues.

The activities were continued in the LEONARDO programme, but the resources allocated are not of a size that allows any major initiatives. Another example of a major information activity of relevance in this context is the international organisation ERYICA (European Youth Information and Counselling Association).

Developments in the information area are happening at a rapidly increasing speed, however - not least due to the new information technologies. Much information is now made available through the Internet, and in the framework of the LEONARDO/PETRA programme. The problems arising here are almost the opposite: how to get an overview of all the material that exists, how to evaluate it and assess its relevance?

Placement in enterprises

Since many transnational activities in VET are placements in companies, there are problems in finding companies willing and suited to take a student/apprentice from abroad (Adams 1996). This applies also to Member States with a long tradition in company-training (e.g. Germany). Besides language and related problems there is also the concern that (rare) training places are taken away from native young people. That these difficulties are real is shown by a recent investigation by the *Deutsch-Französisches Jugendwerk/Office Franco-Allemand pour la Jeunesse* (1996) which followed the whereabouts of young people looking for placements in other countries. For an overwhelming majority, the search was fruitless.

The recommendations of the Green Paper of the European Commission confirm that transnational mobility taking place in the context of formalised vocational education and training and leading to recognised qualifications consists of more than a mere shifting across borders of a number of students/apprentices.

> **A notion of quality is essential in transnational placements in a VET context. Quality criteria in this field could be the selection and preparation of participants as well as host company, monitoring and evaluation of the activities.**

Out of these, the linguistic and cultural preparation has received attention. In the framework of the PETRA programme, a study (Carpenter/Watters 1994) draws on experiences both from the programme itself, from the LINGUA programme and also involved expertise from the Council of Europe in Strasbourg. The paper offers a comprehensive overview of the experiences gathered so far, especially in relation to linguistic preparation

2.5 Conclusions

If the initiatives[29] on promoting mobility in VET are to succeed, there are two major obstacles that will have to be removed first. One is a practical one, concerned with the difficulties of finding work placements in other Member States. The other one is concerned with the problem of recognition of periods spent in another Member State.

There is no simple top-down solution to the first problem. In all cases the individual employer decides whether or not to accept a foreign student/apprentice in his company. What actually motivates a company to accept a student/apprentice from abroad has not yet been analysed, but would need to be known to form the basis for a concerted recruitment effort. There was only one attempt in this direction, albeit on a very minor scale, by the European Commission in the framework of the PETRA programme (Della Valle 1994).

Another step could be to encourage the formation of strategic alliances between placement organisers across the borders. At present, a multitude of placement organisers exist and operate on local, regional, national or European level, but their aims are often too different to allow direct collaboration.

If mobility in VET is to expand, the concept of quality assumes an even more central role than today. How can one be sure that a given enterprise is able to provide the training required for the placement,[30] and - if this is ascertained - how is the placement monitored to ensure that it is actually done, and that the student/apprentice is not merely used as cheap labour? It is rarely possible for a placement organiser to visit all foreign enterprises and assess these *in situ*, and there are no ways of sanctioning them if they do not fulfil their initial promises.

The most obvious solution to this problem would be to enlist the aid of the certifying bodies for apprenticeship training in the host country and entrust them with the monitoring of placements according to a set of transparent quality criteria, but there are as yet no evident models for this.

The proposal of the Commission to create a "European Qualification Area" is impossible to impose as a top-down decision, and it is up to the certifying bodies in each Member State to adapt their systems so that transnational placements become an integral part, both with regard to work placements (in the Member States where the system is alternance-based) and school placements.

Hanff (1996) points to several projects and examples in the PETRA programme which have proceeded on the basis of these to elaborate joint training modules that students/apprentices may take in any of the involved Member States.

Transnational mobility in vocational education and training is a fairly recent phenomenon, the study of which combines elements from such diverse fields in pure and applied sciences as sociology, psychology, law, pedagogy, demography, educational research, political sciences, languages, history and geography.

Even though there are research and development environments in related areas (e.g. in the area of labour-market mobility, comparability of qualifications, international qualifications, language training pedagogies in a vocational context, etc.), it has not yet been established as a proper field for research.

We may here draw a parallel with the field of guidance and counselling (cf. Part Three) and to comparative VET research (cf. chapter 1 of this part), which are equally diverse fields without or with a not yet sufficient academic "background", but where a professional environment is emerging and where there is a coordination and dissemination of research via the existence of professional societies and institutions on regional, national and European level.

Transnational mobility in VET is only possible on a larger scale with the possibilities of free movement that have been developed and institutionalised over

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29) In its White Paper "Teaching and Learning: Towards the Learning Society" (1995a) the European Commission proposed the creation of an "ERASMUS programme for apprentices", i.e. a scheme whereby young people in alternance-based VET can spend an extended period of time in a placement in another Member State. (Note that this scheme is not identical with the former ERASMUS programme.)

30) The quality issue must also work the other way round, however, i.e. to ensure that the host company will receive a motivated and well prepared student/apprentice that can perform the tasks that he is expected to.

the years, the availability of mobility-related information, the removal of barriers and support by funds from the mobility programmes. Thus, there is a need for a centripetal force, acting as a repository of examples of good practice, research and development activities, evaluating all actions in the field and bringing together the various elements and actors in a constructive atmosphere to ensure a process of mutual enrichment.

3 Labour force migration in the EU: empirical findings[31]

3.1 Approaches to explain international migration

Decisions for migration

Analyses of migration[32] decisions have to consider various aspects of which economics-based decisions explaining migration are only part (cf. for the following Franz 1996).

The motives of potential migrants differ, ranging from individual motives to economically and politically-motivated migrations. Migration decisions are often not only the result of individual considerations, but have also to be seen in the family context, e.g. if a family member wants to migrate. Immaterial consequences for other family members (e.g. school problems, loss of the social environment, etc.) and material costs (e.g. costs of moving, higher rent, etc.) have to be taken into account as "transaction costs".

An economically-motivated decision to migrate has to distinguish between the economic situation in the home country and in the destination country. In this case, the decision to migrate will be taken if positive earnings differentials, including mobility costs and transaction costs are expected.

A migration can fail - even in the case of free movement of labour as in the EU - because of institutional barriers (cf. chapter 2), of which an insufficient or lacking recognition of certificates could be regarded as the main obstacle, besides social/transaction considerations.

Theoretical approaches

Franz (1996) distinguishes between three main theories to explain migration decisions: human capital and job search theories and gravitation models.

Human capital approach

According to the human capital approach, the decision to migrate is based on a comparison of alternative costs and benefits of different domiciles. The potential migrant will choose the country where he/she expects the net benefit to be highest. Extensions of the human capital theory consider in particular risk theories. Nevertheless one criticism is that aspects of information provision and processing are dealt with only superficially.

Job search theory

In contrast to the human capital theory, job search theories consider mobility decision processes in case of incomplete information and thus also take into account the costs of the provision of information. Mobility (in a broad sense, i.e. between firms, sectors, regions, countries, etc.) is an integral part of the search process.[33] Modifications of the job search theory consider information-theoretic aspects (in the framework of sequential decision theories) and game theories.

Gravity models

The main application of gravity models is found in the so-called "spatial interaction models" considering (gross) migration flows in a spatial network. Factors of influence are "push and pull factors" of the regions under consideration, in particular different economic conditions of labour markets, wages, etc. Although these models are capable of explaining some aspects of internal migration (e.g. commuting or shopping behaviour) they neglect decision processes and concentrate more on gross migration instead of net migration flows.

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31) *This is a slightly abridged version of the contribution of P. Descy and M. Tessaring (1997): Migrants in the European Union: Some empirical findings.*
The authors would like to thank Eurostat for its valuable support in carrying out the analysis.

32) It should be noted that "migration" is a specific case of "mobility". Whereas mobility refers to all kinds of moves from on place/region or status (e.g. occupation, social, workplace within a company, etc.) to another and also comprises, e.g. "frontier mobility", migration means the change of one's residence from one country to the other.

33) In case of contractual migration the factual move is the result of search processes.

3.2 European labour migration: Some empirical findings

In this section some findings of the European Labour Force Survey 1995, conducted by Eurostat and carried out by the national Statistical Offices will be presented. The data cover the labour force[34] in all 15 Member States, differentiated by additional characteristics. Some characteristics and data, however, were not available for all countries. Deficits are in particular given for the German data concerning the variable "country of birth"; as an alternative, the variable "nationality" was used for Germany.

Out of several characteristics which were included in the analysis[35], we concentrate on the level of education of migrants, according to ISCED[36].

General figures

To gain an overall picture, at first some basic data of the distribution of migrants and residents in EUR 15 will be presented. The comprehensive basic distribution of residents and migrants - both being workers - by single countries is presented as a matrix in *table 5-1*.

The rows of the matrix represent migrant workers according to their country of birth, and the columns indicate the national origins of migrant workers[37]. The diagonal consists of resident workers born[38] *and* living in the same country. Thus, the rows illustrate where migrants have gone to, whereas the columns indicate - for a single country - where they came from.

> The EU labour force consists in 148.2 million people, the overwhelming majority (138.7 million or 94%) of them working in their country of birth. Out of the 9.5 million born elsewhere, 2.9 million (2.0% of the total EU labour force) were born in a country of the (present) EU, whereas more than double, 6.6 million (4.4%) were born outside the EU.

This tends to confirm the statement of Werner (1996) that the push-pull factors of international mobility within the EU play an increasingly minor role in explaining migration. In particular, it can be assumed that the structural funds of the EU have resulted in a decreasing "prosperity gap" between different EU regions; earnings differentials seem to be not as high as to outweigh the transaction costs connected with a move of the family.

Table 5-2 summarises these results for the whole of the European Union.

Immigration in the EU Member States

Looking at single Member States, it becomes obvious that L (38%), A (12%) and F (11%) have the highest shares of immigrants. The lowest shares are found in I (0.5%), E (2.2%) and FIN (3.4%).

The majority of immigrants in L (34%) were born in the EU - presumably most of them are working at EU institutions or are indirectly related to these (e.g. in personal services). On the other hand, immigrants from non-EU countries prevail in F (7.1%) and in A (10.1%). The same is true in most other EU countries, except B (here, also, presumably because of work in EU institutions) and IRL.

Table 5-3 and *figure 5-1* illustrate the distribution of EU and non-EU immigrants by single Member States.

In B, L and IRL, migrant labour force comes mainly from EU Member States. In the other Member States, the share of EU migrants in the labour force remains under the share of non-EU migrants.

Working outside the country of birth

Some 1.8 % of the EU labour force work outside its country of birth in another EU Member State *(figure 5-2)*[39]. Looking also at *table 5-3* above, Portuguese are most mobile (10% of the Portuguese "potential" labour force), they work mainly in F (86%) and a majority have been working in this country for more than 10 years. They are followed by people born in L out of which 8% work in another Member State, mainly in B (41%). The Irish also belong to those

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[34] All data presented refer to the labour force. The labour force is the total of employed and unemployed persons.

[35] The other characteristics studied in this analysis were: professional status, permanency of the job, sector of employment, years of residence and level of education.

[36] For a description of ISCED cf. the annex.

[37] The figures refer to workers who have their residence not in their country of birth. Cases, where someone is living in another country than where he/she was born but works in a third country (or his country of birth), are not identifiable by these figures.

[38] Except Germany: the variable "nationality" had to be used.

[39] National labour force + emigrants born in the country.

Table 5-1: Migrant workers in the European Union - an overview (1000)

Born in country*	Working in country B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	Total EU migrants	Total residents and migrants
B	3484.3	.	9.4	.	5.1	36.0	.	.	5.0	19.5	.	.			(6.1)	83.9	3568.2
DK		2508.9	10.1	.	.	.	.		(1.0)	.					9.2	25.1	2534.0
D	25.6	9.5	32790.8	18.8	18.0	80.4	.	(5.7)	4.5	49.5	43.3	(3.6)			114.2	375.2	33166.0
EL	5.8		205.8	3669.6	.	(6.6)	.	.	(0.5)	.	.				(7.5)	230.5	3900.1
E	17.4	.	73.8	.	11762.3	137.1	.	.	(1.3)	6.6	.	(3.0)			19.0	261.8	12024.0
F	41.3	.	62.2	.	40.2	19623.6	.	.	6.5	10.0	5.4	20.2			37.8	229.8	19853.4
IRL		.	12.7	.	.	.	1192.2	.	.	.		.			50.9	69.5	1261.7
I	41.4	.	326.5	.	7.3	128.7	.	19855.4	5.8	9.2	4.7	.			47.1	574.8	20430.2
L	(3.6)		.		.	.	.		100.0	.	.				0.0	10.5	110.5
NL	28.2	(3.5)	62.4		.	10.0	.	.	(1.4)	6277.8	.	.			15.9	127.8	6405.5
A			118.1		.	(4.1)		.	.	(3.5)	3235.5				(7.2)	135.1	3370.7
P	5.8	.	49.5	.	15.9	412.1			26.8	(3.2)	.	4248.8			15.8	529.9	4778.7
FIN	.				.				.	.	.		1946.6		(6.4)	11.0	1957.6
S	.	8.8	(6.6)	.	.	.		.		.	(3.0)	.	.	3904.6	8.9	34.6	3939.2
UK	10.1	7.9	63.4	(3.9)	10.2	36.8	50.9	.	1.7	23.9	4.6	.	.		24114.5	214.9	24329.4
Total residents and EU migrants in the European Union:																	141629.2
Total EU-migrants	181.9	37.4	1002.4	29.8	102.2	860.3	57.1	14.7	54.9	130.8	66.8	29.7	.		345.9	2914.2	-
Non-EU migrants	126.4	54.4	1988.8	121.1	163.0	1572.8	12.7	73.3	6.8	370.8	372.2	138.3	68.7	229.7	1273.8	-	6572.7
Total labour force	3792.6	2600.7	35782.0	3820.5	12027.4	22056.6	1262.0	19943.4	161.6	6779.3	3674.5	4416.8	2015.7	4134.3	25734.3	-	148201.8

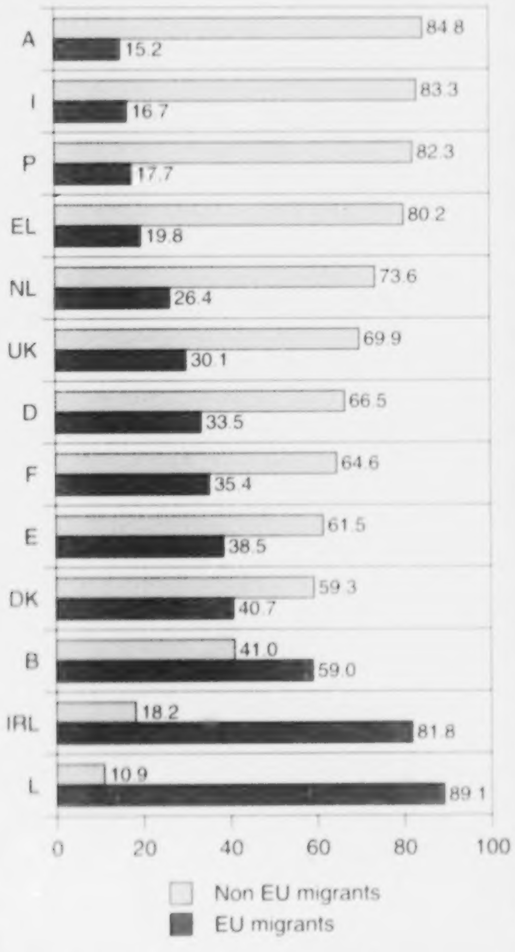
* Germany: nationality
. data not available
( ) low statistical representativity due to small figures
slight differences by rounding
note: the diagonal represents domestic workers born in the country (or have its nationality, as in case of Germany)

Table 5-2 : Labour force and migrants; EUR 15, 1995

	1000	%
Residents	138714.9	93.6
EU migrants	2914.2	2.0
Non-EU migrants	6572.7	4.4
Total migrants	9486.9	6.4
Total labour force	**148201.8**	**100.0**

Source: Eurostat: Labour Force Survey 1995

Figure 5-1: Share of EU and non-EU migrants in the labour force by Member States



Source: Eurostat: Labour force Survey 1995

Table 5-3: Labour force and migrants by EU countries 1995

	total labour force (1000)	out of which (%): nationals	EU migrants	non-EU migrants
B	3792.6	91.9	4.8	3.3
DK	2600.7	96.5	1.4	2.1
D	35782.0	91.6	2.8	5.6
EL	3820.5	96.1	0.8	3.2
E	12027.4	97.8	0.8	1.4
F	22056.6	89.0	3.9	7.1
IRL	1262.0	94.5	4.5	1.0
I	19943.4	99.6	0.1	0.4
L	161.6	61.9	34.0	4.2
NL	6779.3	92.6	1.9	5.5
A	3674.5	88.1	1.8	10.1
P	4416.8	96.2	0.7	3.1
FIN	2015.7	96.6	.	3.4
S	4134.3	94.4	0.0	5.6
UK	25734.3	93.7	1.3	4.9

. = no data available
Source: Eurostat: Labour Force Survey 1995

countries with relatively large numbers of emigrants: 4.5% work abroad, most of them in the UK.

A majority of Belgian migrants work in France (48%) and The Netherlands (26%). Spanish migrants work in France (72%). Italians migrate to France (52%), the UK (19%) and Belgium (17%) and the Dutch migrate to Belgium (43%) and the UK (25%).

3.3 Level of education

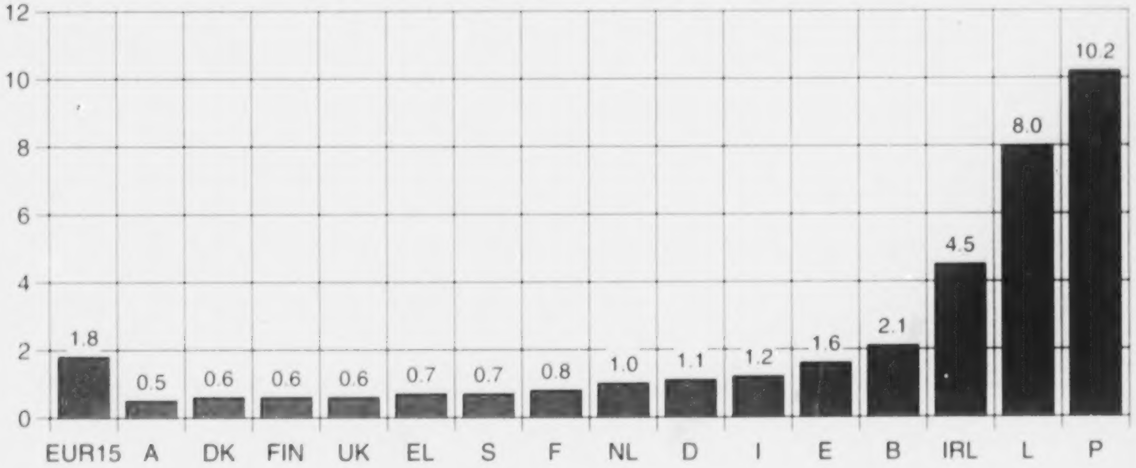
EU migrants and nationals

Table 5-4 illustrates the educational level of emigrants, i.e. those people who were born in an other EU country than the country they are working.

The level of education of Belgian, Danish, German, Luxembourg, Dutch and British people working abroad inside the EU is generally high or intermediate. The percentage of less educated migrants of these nationalities varies between 20% for the UK and 31% for the NL.

Spanish, French, Irish, Italian and Portuguese people working abroad inside EU have on the average a

Figure 5-2: People born in an EU Member State and working in another EU Member State (%)



no data available for Germany
note: the percentages represent the proportion of people born in a certain country and working in another EU country. The number of people working abroad in an EU Member State is divided by the sum of the total labour force of the representative country of birth + emigrants ("potential labour force")
Source: Eurostat: Labour Force Survey 1995

Table 5-4: Level of education of EU migrants by country of birth (%)

Country of birth	Level of education High (ISCED 5-7)	Medium (ISCED 3)	Low (ISCED 0-2)
B	40.5	36.2	23.4
DK	30.8	41.7	27.5
D	30.7	42.5	26.5
EL	33.9	32.6	33.4
E	13.9	33.1	52.9
F	22.4	27.6	50.0
IRL	24.2	29.5	56.0
I	13.3	32.2	54.5
L	45.7	26.8	27.5
NL	41.4	27.4	31.2
A	25.4	50.2	24.4
P	3.3	18.9	77.8
FIN	(36.5)	(26.5)	37.0
S	38.5	26.5	35.0
UK	44.7	35.0	20.0

note: "high level of education": more than upper secondary school; "medium level": upper secondary school; "low level": equivalent or less than secondary school
"no answers" are not included in the figures
Source: Eurostat: Labour Force Survey 1995

lower level of education than the nationalities mentioned above. The percentages of less educated migrants inside EU for these countries vary between 50% (French) and 78% (Portuguese).

The three levels of education of Greek, Finnish and Swedish people working abroad in the EU are more or less equally distributed. Half of the Austrian migrants inside the EU have an intermediate level of education.

Table 5-5 shows the educational level of the labour force in the "working countries", differentiated by nationals and EU migrants (non-EU migrants thus are not included in the labour force).

It seems that EU Member States are facing two different kinds of immigration. The EU migrant labour force is on the whole better educated than nationals in EL, E, I and P; the same is true in DK, IRL and A. Nationals are on average better educated than EU immigrants in D, F, L, NL and the UK. In Belgium, there are no significant differences between the level of education of EU immigrants and nationals.

❑ In Denmark, Greece, Spain and Ireland, the proportion of immigrants with a *high level of*

Table 5-5: Level of education: percentage of migrants compared to nationals in the EU Member States 1995

country of work		Level of education High	Medium	Low
B	Nationals	29.9	37.8	32.3
	EU migrants	27.9	33.5	38.6
DK	Nationals	25.6	54.2	20.2
	EU migrants	44.8	39.9	15.3
D	Nationals	24.3	59.3	12.9
	EU migrants	16.6	41.3	38.0
EL	Nationals	16.6	30.2	53.2
	EU migrants	26.1	53.6	20.3
E	Nationals	21.0	16.1	63.0
	EU migrants	31.3	21.9	46.8
F	Nationals	21.4	47.7	30.9
	EU migrants	15.1	27.7	57.1
IRL	Nationals	25.0	33.0	41.9
	EU migrants	41.6	29.3	28.9
I	Nationals	10.2	34.5	55.3
	EU migrants	(40.8)	(33.5)	(25.6)
L	Nationals	18.8	37.8	43.4
	EU migrants	18.7	18.7	62.6
NL	Nationals	23.1	60.1	16.4
	EU migrants	26.5	53.0	19.2
A	Nationals	8.4	67.5	24.0
	EU migrants	28.2	57.2	14.6
P	Nationals	12.1	11.4	76.5
	EU migrants	(11.2)	28.9	59.9
FIN	Nationals	24.6	48.0	27.4
	EU migrants	.	.	.
S	Nationals	27.7	47.9	24.4
	EU migrants	.	.	.
UK	Nationals	23.2	34.7	41.9
	EU migrants	21.6	22.3	55.9

. = no figures available - ( ) sample size too small
Source: Eurostat: Labour Force Survey 1995

qualification is significantly higher than that of nationals: in Italy and Austria immigrants with a high level of education exceed the proportion of nationals by as much as four times. The reverse is true in Germany, France and the UK, where the proportion of EU immigrants with a high level of education is lower than for nationals.

- In Portugal, the proportion of *medium qualifications* (upper secondary graduates) is more than twice as high among migrants than among nationals; to a lesser degree this applies also to Greece and Spain.
  In Denmark, Germany, France, Ireland, Luxembourg, The Netherlands, Austria and the UK, the proportion of immigrants with a medium level of education is less than for the nationals.

- The proportions of *less educated immigrants* in Germany, France, Luxembourg, The Netherlands and the UK is higher than the share of low qualified nationals in these countries. The reverse is true for Denmark, Greece, Spain, Ireland, Italy, Austria and Portugal.

In order to give a more illustrative figure of the qualification levels of nationals and EU immigrants, the percentage shares of people with lower, medium and higher qualifications have been weighted by average years of schooling and training. Because it was not possible to calculate individual years of schooling for every single country and form of education and training, and, in addition, to make distinctions between the years of schooling for older and younger generations, we made the following assumptions for *all* countries:

- "low educational level": 9 years (compulsory schooling, average: 8 years + 1 year practical training);

- "medium educational level": 12 years (compulsory schooling: 8 years + continuing general education or vocational training and further training: 4 years);

- "high educational level": 15 years (compulsory + continuing schooling: 11 years + higher education and post graduate studies: 4 years).

These weighted educational levels do *not*, of course, give any information on the *quality* of training, but are merely rough quantitative indices.

The results are shown in *table 5-6:* The score of EU migrants is lower in six countries out of 14 (Belgium, Germany, France, Luxembourg, The Netherlands, and, to a lesser degree in the UK), which means that in these countries the national labour force is on the whole - measured by average school and training duration - better educated than the EU migrant labour force. Significantly higher levels of education for EU migrants than for residents are found in Denmark, Greece, Spain, Ireland, Italy and Austria.

Table 5-6: Educational levels of residents and EU migrants 1995 (Indices of average education and training levels, weighted by school years)

country	Index for educational level	
	National labour force	EU migrants
B	1192.8	1168.0
DK	1216.2	1288.6
D	1192.2	1086.6
EL	1090.4	1217.4
E	1074.0	1153.5
F	1171.6	1073.9
IRL	1147.1	1235.3
I	1064.6	1245.6
L	1126.2	1068.2
NL	1214.1	1206.2
A	1153.1	1240.7
P	1006.5	1053.9
FIN	1191.6	1200.0
S	1209.3	-
UK	1140.8	1094.8

note: the index was calculated by weighing the percentages for each educational levels (residents and migrants) with average school years.
Source: own calculations based on Eurostat: Labour Force Survey 1995

EU and non-EU migrants

Comparing the educational levels of EU and non-EU migrants with each other *(table 5-7)*, in general the level of education of EU immigrants is higher than that of non-EU immigrants in Denmark, Germany, Greece, Italy, The Netherlands and Austria; and lower in Spain, France and Portugal.

Non-EU immigrants have a higher education than EU-immigrants in Belgium, Spain, France, Ireland, Portugal and the UK. The proportion of people with a medium level is higher among non-EU migrants in Spain, France, Luxembourg and Portugal.

Concerning immigrants with lower educational levels, in Denmark, Germany, Greece, Italy, The Netherlands and Austria, non-EU immigrants are on the average less qualified than EU immigrants

3.4 Willingness to move and work within the EU

The willingness to work in another EU Member State was one question asked for in the *ad hoc* labour force survey in 1994 *(table 5-8)*.

Table 5-7: Migrants by level of education, EUR15 - comparison between EU and non-EU migrants (%)

country of work		Level of education		
	migrants	High	Medium	Low
B	EU	27.9	33.5	38.6
	non EU	33.2	28.2	38.6
DK	EU	44.8	39.9	15.3
	non EU	37.6	38.5	24.0
D	EU	16.6	41.3	38.0
	non-EU	10.9	40.3	42.6
EL	EU	26.1	53.6	20.3
	non EU	22.0	38.4	39.6
E	EU	31.3	21.9	46.8
	non EU	35.3	25.7	39.0
F	EU	15.1	27.7	57.1
	non EU	25.2	32.26	42.5
IRL	EU	41.6	29.3	28.9
	non EU	59.2	(26.1)	.
I	EU	(40.8)	(33.5)	(25.6)
	non EU	20.3	22.5	57.2
L	EU	18.71	18.7	62.6
	non EU	(18.5)	29.3	52.2
NL	EU	26.5	53.0	19.2
	non EU	20.4	47.7	30.9
A	EU	28.2	57.2	14.6
	non EU	7.6	41.2	51.3
P	EU	(11.2)	28.9	59.9
	non EU	37.7	32.2	30.1
FIN	EU	.	.	.
	non EU	.	.	.
S	EU	.	.	.
	non EU	35.0	42.6	21.7
UK	EU	21.6	22.3	55.9
	non EU	29.9	19.5	50.3

=data not available without "education not stated"
Source: Eurostat: Labour Force Survey 1995

In total, 44% of the Europeans are willing to work in another EU Member State. The UK, Portugal, Denmark and France have percentages above average. German, Greek and Belgian people had the lowest inclination to work abroad.

- Younger people have a higher inclination to work in another EU Member State: 54% of the age groups younger than 30 years were willing to work in an other EU country; out of the age

Table 5-8: Willingness to work in another EU country by different characteristics (%)

	total	male	female	younger[1]	middle age[2]	older[3]
EUR	44	51	37	54	45	30
B	34	36	31	43	32	23
DK	52	60	44	71	49	35
D	31	34	21	39	27	15
EL	28	32	30	36	33	16
E	48	53	40	53	47	37
F	50	56	42	58	50	30
IRL	41	48	33	58	34	30
I	49	54	44	58	56	39
NL	45	55	34	60	42	36
P	56	62	47	65	57	30
UK	57	66	45	67	56	39

1) up to 30 years old - 2) aged between 30 and 49 - 3) aged 49 upwards
EUR12 without Luxembourg
Source: European Commission 1995c (ad hoc Labour Force Survey 1994)

group 30 to 49 years only 45% and of those persons older than 50 years only 30% were willing to do so. It can be assumed that the transaction costs are lower for younger people and - being at the beginning of their working life - they expect new experiences which may be useful for their career.

- Women are less willing to work abroad (37%) than men (51%). The main obstacle for women as well as men was to change their domicile.
- The main obstacles to mobility (67%) is the fact that people do not want to *move* abroad, i.e. to change their domicile. Furthermore, for almost one-third commuting is not possible. These obstacles are interdependent: to work abroad without moving abroad often fails because of lacking commuting possibilities *(table 5-9)*.
- It is worth noting that only 17% stated that income and career abroad was *un*attractive and would thus be an obstacle; this means that 83% would potentially work abroad because of labour market/financial reasons. However, the transaction costs, which were not asked for, might have been considered as too high.
- It should also be noted that language barriers were not of the highest order: 32% of males and females in the sample had such problems. Cultural barriers are an obstacle only for less than 20% of all workers.

3.5 Conclusions

The scale of labour force mobility across the EU is relatively limited. In 1995 only 2% of the European labour force lived in a country other than their country of origin. An analysis of the EU Labour Force Survey 1995 also shows that the qualifications of mobile workers do not differ to any major extent from those of non-mobile workers although there are some country-specific differences. The same applies to job status and working hours regulations.

The main reasons for the low mobility of the labour force might be a growing harmonisation of the standard of living in the EU. High transaction costs and family-related problems are further reasons for immobility which tends to impede the economic goal of better regional and occupational allocation of labour.

A survey in 1994 revealed that 44% of Europeans, mainly younger people and men, are indeed prepared to work abroad. Financial and language problems play only a subordinate role here. They were, however, less willing to move abroad. This is an indirect reference to high transaction and social costs.

Some forms of mobility do seem to be increasing, however, although there is a major information gap in this respect: mobility on the internal labour market of international companies and frontier mobility

Table 5-9: Obstacles to mobility, EUR 12 (%)

Obstacles asked for	total	male	female	younger[1]	middle age[2]	older[3]
Commuting not possible	30	28	33	27	31	31
Do not want to move abroad	67	67	68	69	68	64
Language barrier	32	32	32	31	32	32
Cultural barrier	18	19	16	15	17	20
Income and career prospects unattractive	17	18	15	16	16	17
Other reasons	20	20	20	16	18	27

1) up to 30 years old; 2) aged between 30 and 49; 3) aged 49 upwards
figures without Luxembourg
Source: European Commission 1995c (ad hoc Labour Force Survey 1994)

in border regions. Given the impending accession of applicant states, improvements to the information base and analyses of the costs and benefits of mobility are urgently needed in respect of the political measures to be taken.

4 Recognition and transparency of skills in the EU: a review[40]

This chapter describes chronologically the attempts in the European Union to progress towards a common vocational training policy, the comparability and recognition of educational and training standards in order to support free movement of labour.

The issue has been and still is marked by a high degree of investment in research and development, investigations and pilot projects in order to back up and to assist policy makers, social actors and practitioners on all relevant levels of intervention, European, national, regional/sector and local levels.

4.1 Harmonisation stage from 1957 to 1973

Founding principles

In the light of the changing competencies and approaches of the Community and the European Union concerning education and training we can distinguish several stages in the development of this issue.

The Treaty of Rome establishing the EEC with its initial six Member States in 1957 defined vocational training policy as one area to be harmonised both legally and de facto. It was stated that the systems should be brought closer into line with each other, and should be made not only comparable but should rather be merged in order to permit a quasi-automatic mutual recognition of qualifications, diplomas and vocational certificates. Vocational training policy in the Community was considered an important and integral part of the political will in order to approximate living and working standards throughout the Community.

An expression of this intention was the adoption of the "general principles for vocational training" laid down by the Council of the EEC in 1963[41]. These principles shaped the approaches pursued up to the mid-seventies and were in force until the Treaty on European Union was ratified in Maastricht in 1993. However, most of these principles, such as providing all young people with vocational training qualifications before completion of (compulsory) schooling age, have been implemented only partly.

Recognition of vocational qualifications

Until the mid-seventies, the recognition of vocational qualifications was promoted as one way to facilitate mobility and to ensure the right of the self-employed and members of the liberal professions, in particular, to establish a business on the basis of Article 51 of the Treaty.

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[40] *This chapter is a summary of the contribution of B. Sellin (1997): Recognition of certificates and transparency of skills in the European Union.*

[41] Council Decision of 2 April 1963 laying down general principles for the implementation of a common vocational training policy, published in OJ L 63/338 of 20.04.1963.

Approximately 15 directives, referring mostly to health occupations and architects, had been adopted by 1974. The drafting of these directives at that time presupposed a setting of common *minimum standards* on the length and contents of training - a process of lengthy negotiations. For example, more than eight years' work was invested in the directive on architects. Some of them have been updated in the meantime and are still in force. In addition, a number of transitional directives have been approved which in the meantime have been replaced by definitive ones permitting the delivery of services throughout the Community.

The social partners and professional associations played a vital role from the outset in accompanying the EEC on its path to develop a common vocational training policy especially on the sub-university level. They were asked to participate as equal partners alongside government representatives in various consultative committees with the European Commission. However the consensus principle did not permit majority decisions, and the competent authorities often blocked one another and could only reach agreement on a rather general level.

Despite this, the discussions and the resultant directives concerning the recognition of academic and/or training qualifications of professionals and liberal occupations and the interventions of the European Social Fund promoted the awareness of the importance of the recognition and transparency of qualifications.

4.2 Recognition of certificates from 1974 to the early nineties

Joint activities

Since the EEC was not responsible for educational policy, but educational policy was a top priority in almost every Member State during this phase, there was keen interest in finding a way to be active in this area, too, complementing the prevailing economic and social policy priorities in respect of a common vocational training policy.

> The Ministers of Education met within the "Council of the EC" for the first time in 1974. They identified four main areas as joint activities:
>
> ❑ the *transition of young people* from school to work and adult life and their vocational preparation within compulsory education at school;
>
> ❑ *equality of opportunities* for girls at secondary schools;
>
> ❑ the training and continuing training of the so-called "second generation" of *migrant workers*;
>
> ❑ promoting closer European cooperation at *higher education level*.

With regard to vocational training, in 1975 the "European Centre for the Development of Vocational Training" (CEDEFOP) was established. This agency is responsible for drawing up relevant documentation, for disseminating information and contributing to a joint vocational training policy and by developing cooperation in research, for providing consultancy services to governments and for supporting Member States in their efforts to develop vocational training systems.

The founding statutes of the Centre also express the need for activities dealing with the "approximation of standards of vocational training with a view to the mutual recognition of certificates and other documents attesting completion of vocational training." (OJ L 39, 1975)

Comparability of vocational training qualifications

The Decision of the Council on the comparability of vocational training qualifications among the Member States,[42] adopted in 1985, intended to make a first step on the way to recognise qualifications for salaried workers. It was initially limited to the level of skilled blue and white-collar workers, and initiated the setting up of an information system to facilitate effective comparisons between training offers in the Member States. Its aim was to promote the mobility of those employees for whom the recognition directives did not apply.

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[42] Council Decision (85/368/EEC) of 16 July 1985 on the comparability of vocational training qualifications between the Member States of the European Community, published in OJ L 199 of 31.7.85.

This Council decision introduced a five-level training structure ranging from semi-skilled workers (level 1) to the professional or university graduate level (level 5), while concentrating on the so-called level 2 (skilled blue and white-collar worker level)[43].

CEDEFOP carried out and supported several studies in this field: experts, including the social partners, discussed a total of 19 sectors and more than 200 occupations. The competent authorities of the Member States reached agreement on these activities by the end of 1993.

This system enabled an effective comparison of vocational training qualifications throughout the then twelve Member States. It found widespread application as an information system for employees and employers to identify certificates and qualifications from different countries and to establish equivalencies. Even though the results were not legally binding, interested parties had a point of reference to assert their right to equal treatment of occupations, equal pay and career opportunities as foreseen in the free movement regulation of 1968[44], according to which no host country may discriminate against anyone who has undergone his or her school education or vocational training in any other Member State.

Many Member States drew on these comparative standards, the jointly written job descriptions and structure of training levels when reforming their own vocational training systems. Member States with firmly established structures for vocational training such as Denmark and Germany also referred to the results and the discussions held during the comparability exercise when updating their systems. Many of the new Member States and associated countries draw on this system and use the occupational descriptions as reference profiles for adapting their own structures.

Although the Council decision of 1985 is still in force the Commission neither proposed an extension of the comparability procedure to other levels nor continued with the remaining occupations and sectors - basically because a number of Member States expressed political reservations.

EU Single Market

A new phase in the development was the adoption of the Single Market programme and the reform of the Treaties in 1987. This also had an impact on the development of education and vocational training policies. The Council introduced the principle of qualified majority and strengthened the co-decision rights of the Parliament in the areas that were important for the establishment of free movement of goods, services, capital and persons, the so-called four basic freedoms of the EC.

In 1985, the "Social Dialogue" between the social partners organisations (UNICE, CEEP, ETUC)[45] was launched at Val Duchesse (B), also including VET aspects, and, in particular, the accreditation, certification and transparency of qualifications.[46]

A new start was also made on speeding up and making the lengthy recognition procedure more effective. Directives for the general recognition of university qualifications and other vocational qualifications for regulated occupations for which state-recognised vocational qualifications are indispensable were prepared and adopted in 1989 - mid-1992. This applied to various occupations in the health, educational, legal, social welfare, merchant shipping and other fields of the Member States. These directives as well as some of the above-mentioned education and vocational training programmes were adopted for the first time by qualified majority.

In spite of these two major Community initiatives towards "comparability" and "recognition", many questions remain open concerning the implementation practices of the Member States. Many employees and self-employed are finding it hard to assert their demands for equal rights and treatment. The

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43) See annex to the Council Decision of 1985, op. cit.

44) Council Regulation (EEC) No. 1612/68 on freedom of movement for workers within the Community, in OJ L 257 of 19 October 1968 as amended by Regulation (EEC) No. 312/76 and Regulation (EEC) No. 2434/92.

45) UNICE: Union of Industrial Employers Confederations in Europe; CEEP: European Centre of Enterprises with Public Participation; ETUC: European Trade Unions Confederation.

46) For a review of the Social Dialogue and its reference to VET cf. Aga (1997).

regional and national authorities often have no clear allocation of competence.

Also the Social Dialogue has not been able to improve this situation up to now. Although the Social Charter[47] made progress in the direction of securing social and vocational training standards, some Member States hesitated in making advances.

Any intervention in vocational training in the course of this phase, mainly founded on social and labour-market policy considerations, and the attempt to establish mutual recognition of training certificates must be considered more or less as failures.

4.3 Maastricht and a common VET policy in the EU

The Treaty establishing the European Union, which was ratified by all Member States in 1993, included educational policy for the first time and redefined competencies for vocational training. For both vocational training and education, the EU was given only a subsidiary and supportive role in promoting collaboration only in more qualitative aspects. It has no own right of legal action and may become active in a legal sense only in those areas which are directly connected with free movement and social standards.

Articles 126 on education and 127 on vocational training define these objectives. Previously launched programmes were grouped together and re-tailored on the basis of these paragraphs: SOCRATES and LEONARDO DA VINCI started in 1995 in addition to other programmes, e.g. "Youth in Europe".

The White Paper of the European Commission on "Growth, Competitiveness and Employment" (1993a) gives a high priority to education and vocational training, placing special emphasis on the need for human resources to adapt to technological, structural, social and economic change in view of the internationalisation and globalisation of the economy and society and the development of the information society.

The White Paper of the European Commission on "Teaching and Learning" (1995a) outlines the consequences of these developments on education and training systems and attempts to set priorities for EU policies in the coming years. It places less emphasis on the mutual recognition of what already exists, however, and more on the "*validation des aquis*", the "accreditation of prior learning" or "late qualification", stressing continuing training and on-the-job experience. It also emphasises core skills and modular development on European as well as on national level and regards recognition of qualifications as part of a renewal of the systems themselves. In future, strong emphasis will be laid on lifelong learning.

> At present, the EU is undergoing major upheavals through the introduction of economic and monetary union and the opening up of Eastern Europe and the association of a number of countries. The common tasks related to education, vocational training and social issues will even become more difficult.

At least the development of minimum criteria and standards would mean a vital element of the social dimension of the EU and could certainly promote mutual trust, cooperation and economic and social cohesion of the EU. As long as no substantial progress is made towards a political union, there will be however little chance to realise these objectives.

4.4 Prospects

The general aim of developing a common reference framework for qualifications and occupational profiles with a promising future is widely accepted. The prerequisites need to be improved at EU level so that the available expertise can be used effectively and the social partners in particular are included in an appropriate manner.

The participation of the Member States in such work and parallel activities will be possible only on a voluntary basis: the results would not be binding as long as they are not applied by the competent organisations themselves. The Member States and the social partners would remain completely autonomous in deciding whether and to what extent they chose to use this framework of reference.

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47) Commission of the European Communities: Community Charter of the Fundamental Social Rights of Workers, Luxembourg 1990; and Agreement on social policy concluded between the Member States of the European Community with the exception of the United Kingdom of Great Britain and Northern Ireland in: Council of the European Community/Commission of the European Communities: Treaty on European Union , Brussels and Luxembourg 1992.

Within the LEONARDO programme, work in this direction has already started concerning the individual portfolio, the network of qualifications databases and the setting up of reference centres on information about and the assessment of foreign qualifications at national or even regional level.[48]

These pragmatic steps may help to accelerate the somewhat moderate progress in this sensitive political area. The goal is not and can never be to force people into mobility; but all assistance should be given to keeping their mobility option open by removing obstacles. One of the main obstacles in this context is still the recognition and validation of formal and non-formal qualifications.

Furthermore, and remembering the high value of immaterial "human capital" compared to physical capital, it seems plausible that not only common standards will be introduced for products and services, but also for qualifications and skills. This also goes hand in hand with an acceleration in the exchange of information and experience.

In contrast, and in view of an increased decentralisation of systems and a "de-standardisation" of individual work biographies, careers, occupational decisions and employment conditions, these efforts are relative and can certainly not be an end in themselves. They should be integrated in the development of human, social and environmental standards, i.e. in the political and cultural development of Europe.

The attractiveness of vocational training and the acquisition of qualifications also depends to a great extent on the degree to which options for occupational and geographic, in-house and external mobility are realisable. The development of reference standards and assessment systems is urgently needed for validating and accrediting competencies fairly, even, and especially in times of growing disorientation.

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48) LEONARDO DA VINCI programme. See Council Decision 94/819/EC of 6.12.1994.

Part Six

General Conclusions and Prospects

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1 "Megatrends" in socio-economic development

The present changes in our societies and economies and the problems on the labour markets as well as possible future developments can be understood better in the light of some universal trends concerning the values and behaviour of people and the systems of education, training and work.[1]

Demographic aspects

- The process of ageing populations and workforces is common to all EU countries. It will have serious consequences for the refreshment of skills and will require a new shaping of continuing training and lifelong learning.
- Increasing old-age dependency will exert pressures on the financing of retirement pensions and thus also have effects on individual earnings and the labour costs of firms as well as on public budgets. But it will also generate new demands related to the specific needs of a growing number of older people.
- Changing family structures, in particular the trend towards small and incomplete families will affect the socialisation of children. What impacts these changes may have on the values, skills and attitudes of future generations remains open.

Technological aspects

- The "second industrial revolution", in particular the diffusion of microelectronics and ICTs, rapid change of production processes, work organisation, of the nature of jobs, and the increasing importance of information and knowledge will affect skill requirements substantially. Though the view is shared by most researchers and policy makers that skills should become more transferable, flexible, extra-functional and versatile, many aspects of implementing and using those skills remain unsolved.
- The de-materialisation of economies, firms' strategies of outsourcing non-core functions, together with the emergence of virtual enterprises and global networks realised by ICTs, will have serious impacts on employment, on the division of work and on the nature and contractual arrangements of jobs. It may increase self-employment and the need for appropriate training in this field. But there are also serious dangers of social insecurity and exclusion.

Economic and labour-market trends

- The globalisation of economies and the increasing need for an external and internal flexibility of labour markets and firms will result in flexible individual careers and work biographies. It is a double challenge for education and employment policies to implement adequate training offers and to institutionalise transitional and flexible labour markets in order to prevent social and economic failures.
- The trend towards decentralisation of both enterprises and State in most European countries may lead to higher responsibilities and efficiencies of steering training and labour markets at regional and local level. The involvement and co-determination of the social partners and of local authorities requires solidarity, collective agreements and consensus-finding for all actors.
- Whether the significant and continuing growth of services and information in terms of employment and economic power will overcome persistent unemployment remains open. The expected job growth in services and information sectors may - without appropriate employment strategies - not be sufficient to reduce unemployment and in particular the dramatic increase in the number of the long-term unemployed and other people at risk. The obsolescence of their skills and changing job profiles may reinforce the mismatch of skills and requirements and thus may - if no appropriate measures are taken - prevent a significant fall in the level of unemployment.
- Environmental problems require an increasing awareness among individuals, enterprises and the state. The ecological aspect however is still under-represented in education and training cur-

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1) Among other publications, this chapter refers to Geissler (1992), Franke/Buttler (1991), European Commission (1993a), Bullinger et al. (1993), Naisbitt (1992) and the discussion in preceding chapters of this report

ricula, and in many cases is considered by firms only in terms of regulations and sanctions. However, environmental awareness increases not at least because of the fact that research and development into environmental products and services will become an important factor in enterprise and economic growth and future competitiveness.

- Reduction in working hours is seen as a major way of reducing unemployment through a redistribution of work. This does not necessarily mean a reduction in lifetime working volume since it may be in conflict with the burden put on social insurance. Flexible working time schedules, however, are increasing and may, if they correspond to the wishes of people, lead to a better control over time and self-realisation, including the use of leisure time for continuing training.

Quality assessment

- Requirements for future-oriented training in innovative and growing sectors are on the increase. In this connection the quality assessment of training is taking on increasing importance both in respect of internal quality (standards, trainers, teaching and learning arrangements, target group orientation, valuation) as well as in its external effectiveness and efficiency (e.g. avoidance of dead-weight and substitution effects, improving transition to labour market and ensuing occupational careers).

- The new technologies and the restructuring of production and work processes may lead to the rapid obsolescence of qualifications. The ageing of the population and the rapid change in work requirements are further strengthening this development. In this context, the quality in particular of continuing training does not just mean reacting to current demands but, with an eye to the future, imparting those skills which will be required in the medium and long term and which can be built on (e.g. in the form of initial and continuing training modules).

- Quality aspects are also addressed in conjunction with the question concerning which learning venues and forms are best suited for training. The trends towards a de-coupling of traditional learning venues - workplace, training institution, home - are on the increase. Many questions concerning the optimum learning environment and the relationship between para-social learning technologies, face-to-face learning, self-directed learning and suitable teaching and learning arrangements, however, have still to be answered.

Social aspects

- There is a strong tendency towards change in the social strata, from monopolistic to pluralistic élites. The service class is increasing, but apparently divided into several strata: performing, intermediate and executive service classes. Blue-collar workers are in the process of "deproletarisation" and differentiation as a result of collective social advancement, an improvement in living conditions and the development of their own life-style and culture.

- As many research studies confirm, the indications of a change in individual values do not go hand in hand with a decreasing valuation of work. On the contrary: individuals want a higher degree of self-determination, participation, communication and recognition at work. Their interest in more leisure and control over time is not seen as an alternative to work, but as a complement. They understand education and training as the major tools for achieving demanding jobs and performing occupational careers and obtaining recognition of work.

- The increasing qualification and labour-market participation of women observed in all EU countries may improve equal opportunities. However, up to now this applies much more to highly qualified women than to lower qualified. As regards earnings, unemployment, work careers and social status, there are still considerable gaps between men and women.

- The dramatic decline of jobs for lower skilled and unskilled workers is expected to continue in the future. This trend affects the employment prospects of all those people which are disadvantaged for personal, social or economic reasons. The danger of social exclusion and marginalisation is expected to aggravate thus leading to a polarisation of societies and negative effects on social cohesion and political stability.

2 Research findings and implications

"Structural change" in society and industry is not a phenomenon which only affects today's world. There has always been social, political and economic change. The new factors are its rapid acceleration and complexity. These have led to different forms of friction, the most obvious being unemployment, inappropriate employment and a growing instability in life and work patterns.

A number of efforts to reduce unemployment and skill-related imbalances have not been very successful. At best they have prevented these phenomena from gaining even more ground. One reason is that unemployment and inappropriate employment are not well defined phenomena but have many causes and take on many different shapes. Visibly connected to education and training are the problems of the transition from training to working life, long term unemployment and "over-education".

Although education and training cannot make a major contribution to creating new jobs - at best they can offer help in the long term - their most important role in complementing labour market and employment policy is to provide transferable, versatile and flexible qualifications either in initial or continuing vocational training which are required on the labour market.

An equally important role would be of a more social character: reducing the increasingly stiff selection processes on the labour market which affect in particular disadvantaged persons, the lower skilled and also women. These tasks of VET policy can best be tackled in a decentralised manner by assigning them to the regional and local levels and bringing in all the players including the social partners.

In this context, several requirements and conflicts must be met in parallel:

- harmonisation between national training standards and local requirements (conflict between coherence and differentiation);
- reconciliation of the interests of the individual and the requirements of the company (conflict between flexibility and productivity);
- reconciliation between short term job requirements and long term employability of the individual.

This leads to various challenges for VET:

1. steering of VET systems, involvement of all players and improvement of the performance of VET systems;
2. avoidance and reduction of unemployment and inadequate employment as well as facilitating the transition to work;
3. curricular redesign in respect of quality, the qualifications provided, venues and formats;
4. supra-national aspects concerning intensified country comparisons, the promotion of mobility, recognition and transparency of skills.

2.1 Steering and performance of VET systems

As a consequence of the increasing differentiation in the socio-economic requirements and the plead for a greater efficiency of training, there is a growing trend in many European countries towards a decentralised steering of VET systems. Decentralisation calls for greater responsibilities to be assumed on the sub-state level and consensus between the players on the spot. However, this raises the problems of the coherence between national VET standards and decentralised implementation.

Whereas many research studies address the issue of steering problems on the central level and involving corporatistic steering, the processes and problems of the decentralisation of competencies in the field of VET have not been adequately researched so far. This applies to issues of safeguarding the quantity and quality of training, to funding arrangements and to the curricular shaping of training.

Both research and political circles are confronted with the problem of the attractiveness of vocational training compared with higher education. What effects does greater permeability in the education have more specifically on the "academic drift" and how can we achieve parity of esteem between these two strands?

This touches on issues of "performance" which should not be reduced to training success, bringing down unemployment or higher earnings. The performance, effectiveness and efficiency of a VET system depend, on the one hand, on the internal organisation of training (homogeneity, commitment of companies; intensity of training and the degree of investment in CVT). On the other hand, criteria for the assessment of external efficiency to be considered are the forms of work organisation and division of labour, in-company and occupational mobility, industrial relations and wage determination.

2.2 VET and the labour market

The ageing of the European population will bring with it a series of problems for training, too, but it will also open up new opportunities. The decreasing renewal of the population of working age opens the door to continuous continuing training and, even more so, to the more intensive interlinking or even new definition of initial training and continuing training. In this way the future downward trend in young workers with update skills could be offset by a greater intensity of training throughout people's entire working lives. To this end, it is necessary to adapt training courses and work conditions to the experience, skills, abilities and expectations of older people.

Given the growing expenditure on pensions and a narrowing of financial scope in public expenditure, VET investment will in future have to compete to a far greater degree with other public expenditure. Whether or not it succeeds will also depend on whether educational policy is able to put across the high value and benefits of education, training and qualifications for social and economic progress.

Companies face a similar problem. Their willingness to invest in training depends to a major degree on cost transparency and the tangible and intangible benefits of training compared to other company investments. The ageing of the workforce throws up additional problems concerning the extent to which career advancement opportunities can be kept open for younger workers on the one hand and on the other how the skills and experiences of older workers can be suitably assessed and capitalised.

Although numerous studies show that education and training make a considerable contribution to economic growth and productivity, so far no satisfactory answer has been given to the question as to the extent to which it can help to create more jobs and above all bring about a drop in unemployment. Given the global deficit in jobs, unemployment cannot be attributed to training alone. On the other hand structural unemployment and long term unemployment have partly to do with the mismatch between qualification profiles and job requirements.

Research studies indicate a growing qualitative mismatch between training and job profiles. Although in methodological terms many questions are still open, the growing degree of "over-education" in many European countries gives rise to concern. Earlier investment in education and training is thus being challenged as are aspects of the flexibility and transferability of skills.

Thus, training in future-oriented, innovative and growing sectors of the economy - in particular apprenticeship or alternate training - is seen as a major tool to prevent future imbalances between skills and job requirements.

What types of qualification increase employability and what time scale must be borne in mind here? Research which focuses on the question of a trade-off between directly productive skills on the one hand and longer term flexible skills on the other, are only in the teething stages and are often of a static character. Nor has a satisfactory answer yet been given to the question of the extent to which disadvantages in training and early career can be overcome or not in later working life.

In this context, one of the most important social-policy issues is to increase the scope and effectiveness of targeted education and training measures for all those people who are disadvantaged by personal or social reasons.

A further aspect is the relations between the institutionalised forms of training and the patterns and organisation of youth labour markets. Given the positive effects of occupational labour markets on the transition and the stability of jobs, more research must be conducted into the factors which determine the creation or stabilisation of those markets. They should, however, also identify the possible consequences of growing "deprofessionalisation".

It is equally important to adjust vocational guidance to the information needs and the status of young people within the decision process. Information provided here should not be over-loaded but appropriate to the specific needs of the target group.

Although much of what is written about the future of education, training and work is speculative and often not fully comprehensible, we do still seem to be witnessing the emergence of a few fundamental trends which are likely to be valid in future, too.

- Firstly, this is the change in values which has less to do with a devaluation of the value of work for the individual and more with altered expectations and attitudes towards work. Future orientation, self-determination, recognition of one's own performance and improved work and career advancement conditions have the highest priority here and should be much more considered in shaping jobs and career development opportunities.

- Furthermore, the question is still open concerning the extent to which the new technologies create jobs and, if so, which jobs are concerned. The employment effects of ICTs, for example, are assessed in a less positive manner than was the case up to the early nineties. Furthermore, it is expected that the jobs created by new technologies will tend to be rather high skill and high wage jobs.

- Available forecasts show that the qualification requirements are continuing to climb. People with medium level qualifications, which are imparted in particular by vocational education and training, are increasingly at risk of being forced into less demanding jobs by people with higher qualifications if they do not succeed themselves in extending their competencies and potential in respect of improved planning, co-ordination and control of their work.

2.3 Curricula and design of skills

In order to be able to exist and survive in an increasingly complex and dynamic society, people not only need technical qualifications but also those skills and competencies which enable them to cope with changing situations and unpredictable requirements. Although the transformation and concrete shape of those "key qualifications and competencies" varies considerably in the training curricula of European countries, some common features are emerging. They include above all the imparting of system and organisation-related skills, in addition to specific occupational skills and knowledge.

In respect of the manner in which these skills are to be imparted, there seems to be a growing shift from instruction-led to constructive learning principles by means of which problem-solving skills are promoted within the framework of new learning environments. In particular the new media are vehicles in order to produce complex, authentic situations and to facilitate self-directed learning although they do not in themselves improve learning success. They can increase a willingness to learn by allowing the individual to determine his learning goals and strategies himself and evaluate control of his learning success.

The question remains to be answered, however, to what extent these "para-social interactions" could replace "face-to-face interactions" and what is the role which traditional training institutions could play here given their space and time constraints.

These questions become all the more pressing when we do not only look on "formal" but also on "non-formal" learning. Research scientists, politicians and practitioners are increasingly focusing on the identification and evaluation of those "tacit" skills. The assessment of non-formal learning requires, in particular, identification of knowledge areas, especially a distinction between objective, verifiable knowledge and subjective-normative knowledge. Here, the selection of the methodology for the assessment and measurement of non-formal learning is as important as the involvement of training institutions, companies, social partners, the individual and the State in order to guarantee the greatest possible acceptance and legitimacy of non-formal learning.

2.4 European aspects

It was not yet possible within this report to cover all research activities related to VET in all EU Member States. Hence, discussion is restricted to the transnational and European aspects of three subjects: (a) requirements and methods of comparative VET research, (b) aspects of mobility and (c) issues of recognition and transparency of skills.

Ad (a): Two methods are predominant in research activities concerning the comparison of EU countries: the main one is the analytical-empirical approach which aims to compare and explain facts, relations and trends and thus sets off in pursuit of regular covariances. The second approach is the hermeneutic approach which aims "to understand" differences between the countries and considers them against the backdrop of historic, cultural and social developments.

These two approaches are reconciled to a certain extent in the "comparative method" which combines historical, functional and quantitative data, interprets their causes and can thus predict the direction of future changes. Its goal on the one hand is generalising theories, universal trends or even "laws" of education developments and processes but on the other the mere identification of their congruities, similarities and diversities.

Future comparative VET research should combine these two approaches. It should be based on an interdisciplinary design and help both to explain and to understand congruities, similarities and differences.

Ad (b): In respect of mobility between European Member States , a distinction should be made between the mobility of workers and the transnational exchange of trainees. The mobility of workers is – despite the enforcement of the free movement of labour in the EU – only developed to a minor degree. Only 2% of the European labour force live in a European country different from the country in which they were born. The characteristics of the EU migrants in respect of training, work status and employment contracts, does not differ to a major degree from those of residents although there are some differences between EU Member States.

When interpreting these data, it should be borne in mind that "mobility" does not have to be a goal in itself and must not be seen solely from the economic angle as an allocation of labour. In addition, the harmonisation of living conditions in Europe, supported by the structural funds of the EU, seems to be well advanced and contributing towards reducing a "prosperity gap". On the other hand – and directly linked – the transaction costs for moving across borders and also the social costs for the individual and his family are the main reasons for immobility. An increase in mobility is mainly to be observed within the framework of international companies and in the case of frontier mobility. Empirical research on this, however, is very much in the initial stages.

In contrast, activities concerning an exchange of trainees between countries do seem to be rather successful. There were and still are however a series of obstacles, in particular the recognition of training and skills obtained elsewhere and the creation of sufficient training places in view of the dwindling training capacities in a country. The evaluation of these exchange programmes – for which the Member States are largely responsible – has still not sufficiently been undertaken. The same applies to follow-up studies about the effects of these exchanges on further training and career paths.

Ad (c): Work on the approximation of standards of vocational training with a view to the mutual recognition of certificates and a higher transparency of skills - a declared goal since the Treaty of Rome and a subject of various regulations on the mutual recognition of training certificates and occupations – has not been continued in a decisive manner in recent years for various reasons. However, there have been increased efforts to extend reference standards, minimum criteria, individual portfolios and reference centres on the information and assessment of foreign qualifications. All these activities require the acceptance and involvement of the Member State and social partners.

3. Perspectives

3.1 Issues of future research reports

As this report has shown, there is a wealth of research activity on the national and international level on various aspects of the organisation and steering of VET, its links to the labour market and society, its curricula and its "European dimension". However, a series of questions has still to be answered or dealt with in greater depth and will have to be the subject of future CEDEFOP reports on VET research.

Some examples are:

- *impacts of decentralisation and regionalisation on VET* concerning contractual arrangements, steering responsibilities and co-ordination, quality assessment, anticipation of job requirements, cohesion with national standards, role of different players;
- *relation between initial and continuing VET:* co-ordination of contents, allocation within working life, target groups;
- *VET and enterprises with special regard to SMEs*: training commitment and factors of influence, recruitment practices and career development, role of internal and external labour markets and relations with VET and CVT;

- *evaluation of the costs and benefits of VET and of funding arrangements* on the individual, enterprise and macro-economic level;
- *the role of education and training for employment creation:* macro, micro-economic and sectoral aspects of job creation, impacts of the globalisation of economies, links between growth, productivity, innovation and employment;
- *new employment opportunities and occupations:* approaches to their identification, skill requirements and implication for the reform of training curricula;
- *skill gaps, over/under-education, mismatch:* concepts and empirical evidence for EU countries, implications for VET policy and curricular design;
- *social aspects of access to and participation in initial and continuing training*, with regard to target groups - in particular women - and policies to combat social exclusion
- *performance of education and training:* efficiency, quality, outcomes and links with employment and labour market;
- *role of alternance* in the context of transitions from training to work and the adaptation of skills to labour market needs: school-based versus enterprise training, advantages/disadvantages of modular training concepts, experience and best practices in EU countries.
- *curricula research and innovations*, progress in the field of the assessment of non-formal learning;
- *new forms of work and job contracts* and their implications for the reform of training systems and curricula;
- *VET research in the European partner states respectively the Accession States.*

3.2 Activities for European research cooperation

In this report, several concrete proposals have been made concerning a closer co-operation of researchers and policy-makers respectively the European Commission. Some of these have already started or are in their preparation stage. Examples for increased activities in future in research, politics and practice are:

- elaboration of *concepts and information schemes for vocational guidance* which include both psychological findings about the career selection process as well as adequate information about new occupations and changing qualification requirements;
- creation of a *European panel for occupational and life biographies* and of European cohort studies to determine and analyse transitional patterns with joint standards;
- *establishment of an experts' panel* in order to in-time identification of changes in VET and their implications for European programmes;
- creation of a *European forecast and scenario system* to predict occupations and qualifications. Consideration should be given to, amongst other things, demographic change, mobility and flexibility as well as sectoral and regional aspects;
- intensification of *comparative research in VET* whereby both empirical-analytical categories as well as socio-cultural background variables are to be taken into account;
- recording of individual, in-company and social *costs and benefits of VET*, including their effects on growth, income, productivity and employment;
- activities to *promote self-directed learning* focusing on the possibilities and boundaries to new instruction technologies and media;
- analyses on *mobility within training and employment*, their costs and advantages as well as evaluation and follow up studies; special consideration should also be given to "virtual mobility" and the role of the new media;
- *improvement of the empirical-statistical information* foundations about developments in the training and employment system in the EU, more specifically on the structure of the long term unemployed, inappropriate or insecure employment and on the transition from training to working life;
- setting up of an *observatory system for new occupations*, their quality and qualification requirements; identification of "labour market niches" for lower skilled people and the disadvantaged.

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1 Institutions, networks and associations in VET research and development

1.1 Institutions

AFPA - Association Nationale pour la Formation Professionnelle des Adultes
13 Place du Général de Gaulle,
F-93108 Montreuil

AMS - Arbeitsmarkt Service Österreich
Treustr. 35-43;
A-1200 Wien

BIB - Bundesinstitut für Bevölkerungsforschung
D-65180 Wiesbaden

BIBB - Bundesinstitut für Berufsbildungsforschung Fehrbelliner Platz 3;
D-10702 Berlin

BIPE Conseil
L'Atrium, 6, Place Abel Gance;
F-Boulogne-Billancourt CEDEX

CEDEFOP European Centre for the Development of Vocational Training
P.O.B. 27 - Finikas;
GR-55102 Thessaloniki

Centre Inffo
Tour Europe;
F-92049 Paris - La Défense Cedex

CEPREMAP - Centre d'Études Prospectives d'Économie Mathématique Appliquées à la Planification
142, Rue du Chevaleret;
F-75013 Paris

CEREQ - Centre d'Etude et de Recherche sur les qualifications
10 Place de la Joliette;
F-13002 Marseille

Chambre des métiers du Grand-Duché de Luxembourg
B. P. 16 04;
L-1016 Luxembourg

CINOP - Centre for Innovation of Education and Training
Pettelaarpark 1;
Postbus 1585;
NL-5200 's-Hertogenbosch

CIRCE
74-80, rue Roque de Fillol;
F-92800 Puteaux

CIREM - Centre d'Iniciatives I Recerques Europees a la Mediterranio
Travessera de les Corts 39-43 lateral, 2°planta;
E-08028 Barcelona

CNRS - Centre National de la Recherche Scientifique
3, Rue Michel-Ange;
F-75016 Paris

DEL - The National Institute for Educational Training of Vocational Teachers
Rigensgate 13;
DK-1316 Kobenhaven K

DFJW - Deutsch-Französisches Jugendwerk
Rhöndorfer Str. 23;
D-53604 Bad Honnef

DINAMIA - Centro de Estudos sobre a Mudança Socioeconómica - Instituto Superior das Ciencias do Trabalho e da Empresa
Av. Das Forças Armadas;
P-1600 Lisboa

DIPF - Deutsches Institut für Internationale Pädagogische Forschung
Schloss-Str. 29;
D-60486 Frankfurt am Main

DJI - Deutsches Jugendinstitut
Freibadstr. 30;
D-81543 München

DTI - Danish Technological Institute
Postboks 141;
Gregersensvej;
DK-2630 Taastrup

ECWS - European Centre for Work and Society
P.O.B. 3073;
NL-6202 Maastricht

EMRU - Employment Market Research Unit
Caxton House, Tothill Street;
UK-London SW1H9NF

EPA - National Observatory on Employment
D. Gounari 2 & Vouliagmenis 518;
GR-17456 Alimos

ESF - European Science Foundation
1, quai Lezay-Marnésia;
F-6700 Strasbourg

ESRI - Economic and Social Research Institute
4 Burlington Road;
IRL-Dublin 4

ETF - European Training Foundation
Viale Settimio Severo 65;
I-10133 Torino

European Foundation for the Improvement of Living and Working Conditions
Wyattville Road, Loughlinstown,
IRL-Co. Dublin

FAS - The Training and Employment Authority
P.O. Box 456;
Upper Baggot Street 27-33;
IRL-Dublin 4

FOREM (CIDOC) - Office communautaire et régional de la formation professionnelle et de l'emploi (Centre intercommunautaire de documentation pour la formation professionnelle)
Boulevard Tirou 104;
B-6000 Charleroi

HIVA - Hooger Instituut voor de Arbeid
University of Leuven E.
Van Evenstraat 2E;
B-3000 Leuven

IAB - Institut für Arbeitsmarkt und Berufsforschung der Bundesanstalt für Arbeit
Regensburger Str. 104;
D-90478 Nürnberg

IBE - Institut für Berufs- und Erwachsenenbildungsforschung
Linz University;
Raimundstr. 17;
A-4020 Linz

IBW - Institut für Bildungsforschung der Wirtschaft
Rainergasse 38;
A-1050 Wien

IEFP - Institute of Employment and Vocational Training
Avenida Jos J Malhoa 11;
P-1100 Lisboa

IER - Institute for Employment Research - University of Warwick
University of Warwick;
UK-Coventry CV4 7AL

IFO - Institut für Wirtschaftsforschung
Poschingerstr. 5;
D-81631 München

ILO - International Labour Office
4, route des Morillons;
CH-1211 Geneva 22

INEM - Instituto Nacional de Empleo
Condesa de Venadito 9;
E-28027 Madrid

Institute of Social Sciences - University of Tromsø
University Tromso;
N-9037 Tromso

IPD - Institute of Personnel and Development
IPD House, 35 Camp Road;
UK-London SW19 4UX

Irédu - Institut de recherche sur l'économie de l'éducation
Université de Bourgogne;
9, avenue Alain Savary;
F-21011 Dijon Cedex

ISF - Institut für Sozialwissenschaftliche Forschung
Jakob-Klar-Str. 9;
D-80796 München

ISFOL - Instituto per lo Sviluppo della Formazione
Via Morgagni 33;
I-00161 Rome

ISTAT - Italian National Statistical Institute
Viale Liegi 13;
I-00198 Rome

ITB - Institut Technik & Bildung
Wilhelm Herbst Str. 7;
D-28359 Bremen

ITS - Instituut voor Toegepaste Sociale Wetenschappen
Toernooiveld 5;
NL-6525 ED Nijmegen

IW - Institut der Deutschen Wirtschaft
Gustav-Heinemann-Ufer 84-88;
D-50968 Köln

LIRHE - Laboratoire Interdisciplinaire de Recherche sur les Resources Humaines et l'Emploi
Place Anatole France;
F-31042 Toulouse CEDEX

LOS - Lernen Organisiert Selbstgesteuert
Universität Bremen, FB 12;
Postfach 330440;
D-28334 Bremen

MPI - Max-Planck-Institut für Bildungsforschung
Lentzeallee 94;
D-14195 Berlin

NBE - National Board of Education
P.O. Box 380;
FI-00531 Helsinki

NEI - Nederlands Economisch Instituut
K.P. van der Mandelelaan 11;
NL-3062 MB Rotterdam

NIESR - National Institute of Economic and Social Research
2 Dean Trench Street;
UK-London SW1P3HE

OAED - Orgánismos Apaschólissis Ergatikoú Dynamikoú <The Manpower Employment Organisation>
Ethnikis Antistasis 8;
Kalamaki;
GR-16610 Athens

OECD - Organisation for Economic Cooperation and Development
Rue André Pascal 2;
F-Paris CEDEX 16

OEEK - Organisation for Vocational Education and Training
Ilioupoleos Street 1;
GR-17236 Athens

Prognos AG
Missionsstr. 62;
CH-4012 Basel

Rhein-Ruhr-Institut für Wirtschaftspolitik
Karlsruher Str. 67,
D-45478 Mühlheim an der Ruhr

ROA - Research Centrum voor Onderwijs en Arbeidsmarkt, Maastricht University
P. O. Box 616;
NL-6200 Maastricht MD

Schweizerische Gesellschaft für Angewandte Berufsbildungsforschung
Ausstellungsstr. 80;
CH-8005 Zürich

SCIENTER - Centro di Ricerche e Servici Avanzati per la Formazione
Via Val d'Aposa, 3;
I-40123 Bologna

SCOTVEC - Scottish Vocational Education Council
Hanover House, 24 Douglas Street;
UK-Glasgow G27NQ

SFS - Sozialforschungsstelle Dortmund
Rheinlanddamm 199;
D-44139 Dortmund

SOFI - Sozialwissenschaftliches Forschungszentrum
Friedländer Weg 31;
D-37085 Göttingen

Swedish Council for Work Life Research
P. O. Box 1122;
S-11181 Stockholm

Swedish EU-Programme Office for Education, Training and Competence Development
P.O. Box 77 85;
S-10396 Stockholm

The Tavistock Institute
30 Tabernacle Street;
UK-London EC2A 4DD

UNESCO - United Nations Educational, Scientific and Cultural Organisation
7, Place de Fontenoy;
F-75700 Paris

WIFO - Wissenschaftsforum
Neue Blumenstr. 1;
D-10179 Berlin

WZB - Wissenschaftszentrum Berlin für Sozialforschung
Reichpietschufer 50;
D-10785 Berlin

ZEW - Zentrum für Europäische Wirtschaftsforschung
L7, 1;
D-68161 Mannheim

1.2 Networks and associations

AEA - Applied Econometrics Association

Aims: To promote econometric applications

Activities related to VET: several conferences on economics of education (last one: "Education, training and employment in the knowledge based economy", Maastricht 14-16 May 1997)

Address: AEA;
16 rue Chateaubriand;
F-75008 Paris
Fax: + 33 / 1 / 48 85 01 19;
e-mail: aea@univ-lyon1.fr
http://www.univ-lyon1.fr/aea

Contact person: Henri Serbat

AEFP-EQ Association Européenne pour la Formation Professionnelle - Euroqualification

Aims: The AEFP continues the project EUROQUALIFICATION and is an association of 12 European organisations of vocational training. Its aim is to maintain the dialogue with the European Commission in order to establish a structure of services to the benefits of its members.

Activities related to VET: The AEFP has identified nine areas of activities:

- ☐ local development and innovative practices;
- ☐ recognition of certificates;
- ☐ efficiency and productivity of vocational training;
- ☐ reinforcement of vocational orientation and guidance;
- ☐ development of technologies in education and training;
- ☐ fight against exclusion of disadvantaged persons;
- ☐ quality standards for training;
- ☐ teachers and trainers in VET;
- ☐ development of foreign languages.

Address: AEFB/EVTA-EQ;
Rue du Viaduc 133;
B-1050 Brussels
Tel.: + 32-2-6445891;
Fax: + 32-2-6407139;
e-mail: AEFP-EQ@euronet.be

General secretariat: AFPA;
13, Place du Général de Gaulle;
F-93108 Montreuil;
Tel.: + 33-1-48705029;
Fax: + 33-1-48700135;
e-mail: 100731.3161@compuserve.com

AG BFN - Arbeitsgemeinschaft Berufsbildungsforschungsnetz
<Working Association "Network in Vocational Training Research">

Character: open network for (mainly German speaking) institutions working in the long term on vocational and occupational research.

Aims: Improving the information infrastructure for voluntary research cooperation and promoting research in vocational training through the exchange of data, documentation and research results.

Activities related to VET

- The AG BFN established a database on "documentation on research in vocational training" and a central literature documentation. Both are constantly updated and also available on CD-ROM. The literature documentation also includes the "Berufsbildungsbericht" (Report on Vocational Training) of the German Government and, starting in autumn 1998, the CEDEFOP literature database.
  (The CD-ROM is available from: Bertelsmann Verlag, Postfach 100633, D-33506 Bielefeld).
- The AG BFN organises every two years a "Forum on Vocational Training Research" (publications of the 1993, 1995 and 1997 Forums are available from: Institut für Arbeitsmarkt- und Berufsforschung (IAB), Nürnberg, address see above).

Address: Current presidency of the AG BFN (1996/97): Dr. Leo Heimerer:
Staatsinstitut für Schulpädagogik und Bildungsforschung,
Arabellastr. 1;
D-81925 München
Tel.: + 49/ 89 / 92 14 21 80;
Fax: + 49 / 89 / 92 14 36 02

ALICE - Adult Learning Information Centre Europe

Aims: In general, the ALICE information service seeks to improve the information flow in the non-formal adult education sector in Europe in order to promote better co-operation between organisations in this sector and to give them better access to European funding possibilities. It furthermore offers an opportunity to the "outside world" to get a better picture of what is happening in the non-formal adult education sector in Europe: its scope, activities and wide participation will become more transparent to various authorities, policy makers, and others.

Address: VCVO;
Gallaitstraat 86;
B-1030 Brussels;
Tel.: + 32 / 2 / 215 27 08;
Fax: + 32 / 2 / 215 80 75

Contact person: Lucien Bosselaers/Suzanne Hana

ALMA

Aims: ALMA is a collaboration in education, research and university services between Rheinisch Westfälische Technische Hochschule in Aachen, Université de Liège, Limburgs Universitair Centrum in Diepenbeek-Hasselt and the University of Limburg in Maastricht

Address: ALMA;
c/o University of Limburg;
Box 616;
NL-6200 MD Maastricht
Tel.: + 31 / 43 / 388 31 11;
Fax: + 31 / 43 / 325 07 33;
e-mail: g.kockelkorn@alma.unimaas.nl

Contact person: Drs. G. Kockelkorn

Further information:
http://www.unimaas.nl/~electra/alma.htm

CEDEFOP Documentary Information Network

Aims:

- to collect and disseminate information about VET in the EU;
- to provide an ongoing and accessible information service to the Centre's partners, clients and staff;
- to make selected data automatically accessible to a wider public, including individuals, particularly via the Internet;
- to exploit the new software for information storage and retrieval;
- to provide a regular update on the latest developments in VET in the Member States and to prepare dossiers on specific themes related to CEDEFOP's Work Programme;
- to strengthen support for colleagues in their project work.

Activities related to VET:
documentation database

Address: CEDEFOP;
P.O.B. 27-Finikas;
GR-55102 Thessaloniki
Tel.: + 30 / 31 / 490 171;
Fax: + 30 / 31 / 490 174;
Internet: http://www.cedefop.gr

Contact persons:
Martina Ni Cheallaigh; e-mail: mnch@cedefop.gr;
Gesa Buttner; e-mail: gmb@cedefop.gr;
Carlos Da Cruz; e-mail: cdc@cedefop.gr;
Maite Santos; e-mail: ms@cedefop.gr;
Marie-Jeanne Tchedry; e-mail: mjt@cedefop.gr;
Colin McCullough; e-mail: cmc@cedefop.gr

CEDEFOP - Teachers and Trainers Network

Aims:

- to encourage transnational cooperation between vocational training institutes providing training for trainers within the European Community framework;
- to promote the transnational transfer of innovative practices particularly in the context of training, curricula, methods, didactics and teaching media;
- to encourage the flow of information between training institutes for trainers and the institutions and bodies responsible for vocational training policy for teachers and trainers;
- to create a "centre of excellence" for the training of trainers with a view to supporting the projects which aim to improve the training of trainers.

Address: CEDEFOP;
P.O. B. 27-Finikas;
GR-55102 Thessaloniki
Tel.: + 30 / 31 / 490 185;
Fax: + 30 / 31 / 490 174;
Internet: http://www.cedefop.gr

Contact person:
Duccio Guerra (e-mail: dg@cedefop.gr)

CEDEFOP - Transparency Network

Aims:

- to improve the understanding of different certification systems, of the transparency of qualifications and of the barriers to the mutual recognition of qualifications;
- to support the Member States and the European Commission in their efforts to establish permanent and reliable mechanisms for promoting mutual understanding of qualifications;
- to provide an updated overview of current developments in Europe in the recognition of qualifications;
- to provide a follow-up to the results of the projects in the LEONARDO DA VINCI programme through a systematic approach to promoting recognition of qualifications.

Address: CEDEFOP;
P.O.B. 27-Finikas;
GR-55102 Thessaloniki
Tel.: + 30 / 31 / 490 121;
Fax: + 30 / 31 / 490 117;
Internet: http://www.cedefop.gr

Contact persons:
Jens Bjørnavold (e-mail: jb@cedefop.gr),
Burkart Sellin (e-mail: bs@cedefop.gr)

CIRETOQ - Circle for Research Co-operation in Europe on Trends in Occupation and Qualification (CEDEFOP)

Aims: "It is the aim of the Euro network to develop comparative references, to exchange research findings and to define areas of research. The network should enable CEDEFOP to fulfil its role in monitoring and analysing trends in trades and skills, a task assigned to it in 1995 with the launching of the EU vocational training programme, LEONARDO. It should also enable CEDEFOP to fulfil the role of providing expert information and consultation for decision-makers in government, European institutions and trade unions and employers organisations. The added value for the participants lies particularly in the fact that they can make their approaches and results accessible to a specialist European public, that they can learn from exchanging the experience they have gathered and draw their own individual consequences for further research work."

Address: CEDEFOP;
P.O.B. 27-Finikas;
GR-55102 Thessaloniki
Tel.: + 30 / 31 / 490 121;
Fax: + 30 / 31 / 490 117;
http://www.cedefop.gr

Contact person:
Burkart Sellin (e-mail: bs@cedefop.gr);
Mara Brugia (e-mail: mb@cedefop.gr);
Tina Bertzeletou (e-mail: tb@cedefop.gr)

Collège Européen de Technologie

Aims: The College is a network of Belgian, French and Luxembourg training and research organisations established in the area of European development pole.

Address: Maison de la Formation,
Centre Jean Monnet;
F-54400 Longwy
Tel.: + 33 / 822 52400;
Fax: + 33 / 822 52499

EAEA - European Association for the Education of Adults

Aims:

- to promote the development of adult education
- to encourage cooperation in adult education at a European level
- to lobby international bodies so that they adopt plans and policies which respond to the needs of the adult population in Europe
- to make it easier for non-governmental organisations to work together and play an active role in the new international scene

Address:
EAEA Office for Organisation and Development;
Pere Vergés 1;
E-08020 Barcelona;
Tel.: + 34-3-2780294;
Fax: + 34-3-278174;
e-mail: eaea@mx2.redestb.es;
Internet: http://www.kaapeli.fi/~vsy/alice/

EAIE - European Association of International Education

Aims are the promotion of academic cooperation and networking in the field of continuing training provisions. Members are educational administrators and researchers from 46 countries.

Activities related to VET: The EAIE has established working groups among other things on following fields: admission officers and credential evaluators;

- economics and business studies;
- European educational programme coordinators;
- languages in educational mobility;
- research and industrial liaison officers;
- study abroad and foreign student advisors;
- work placement and internship networking group.

Address: EAIE Secretariat;
Van Diemenstraat 344;
NL-1013 CR Amsterdam
Tel.: + 31-20-6252727;
Fax: + 31-20-6209406;
e-mail: eaie@eaie.nl;
Internet: http://www.csc.fi/forum/EAIE

EALE - European Association of Labour Economists

Aims: to promote the advancement of knowledge in the field of labour economics in Europe and elsewhere. Its activities include the organisation of international conferences and workshops, the promotion of the study and application of labour economics, the formation of international groups concerned with research and teaching, and support to publications in the field of labour economics.

Address: EALE Secretariat;
c/o Research Centre for Education and the Labour Market;
Maastricht University;
P.O. Box 616;
NL-6200 Maastricht MD
Tel.: + 31 / 43 / 388 36 47;
Fax: + 31 / 43 / 321 09 99;
e-mail: M.Romans@ROA.UNIMAAS.NL
http://www.unimaas.nl/~eale;
information about the EALE Newsletter can be obtained from: http://www.warwick.ac.uk/ier/eale.html

Contact person: Prof. Hans Heijke

EDEN - European Distance Education Network; NAP - Network of Academics and Professionals

Aims: EDEN is "the only European network open to all individuals and institutions involved in open and distant learning". Its aims are to promote exchange of information, to facilitate networks and to enhance professional development. The network of Academics and Professionals (NAP) has been set up to support activities of interest to individual members of EDEN, in line with EDEN's general aims and activities. It comprises all individual members of EDEN, as well as individuals delegated by institutional members. It is coordinated by a Steering Committee elected by a ballot of its members.

Address: EDEN Secretariat;
Box 52;
UK-Milton Keynes MK7 6DX
Tel.: + 44/19 08 / 65 41 47;
Fax: + 44 / 10 98 / 65 43 74;
E-mail: eden@open.ac.uk;
http://www.open.ac.uk/Partners/EDEN

EDINEB - Educational Innovation in Economics and Business

Aims: Mutual support to member institutions who wish to adapt their curricula to highly innovative programmes;
development of technologies, approaches (such as problem-based learning), methodologies and tools appropriate to curricula, and others

Address: EDINEB Network;
P.O. Box 616;
NL-6200 MD Maastricht
Tel: + 31 / 43 / 388 37 70;
Fax:+ 31 / 43 / 325 85 35;
E-mail: EDINEB@facburfdew.RuLimburg.NL

Contact person: Ellen M.M. Nelissen

EERA - European Educational Research Association

Aims: EERA is a learned society and is a recognised Scottish charity. Its members consist of national associations, institutes of educational research and individual researchers throughout Europe. Its main functions are to promote the development and dissemination of educational research and to increase levels of collaboration amongst European educational researchers and amongst researchers, policy-makers and practitioners within the field of education.

Address: EERA;
c/o SCRE;
St John Street;
UK-Edinburgh EH8 8JR, Scotland

EERA has established the following networks:

Research into Continuing Professional Development of Teachers

Scope: the focus of the network's research is on the ways in which teachers learn and develop over a career, and the biographical, historical, situational and policy contexts in which this learning and development occur.

Chair: Prof. Christopher Day, School of Education, University of Nottingham, University Park, UK-Nottingham NG7 2RD;
e-mail: Christopher.Day@nottingham.ac.uk

Vocational Education and Training (VETNET)

Scope: the mission of the network is to stimulate the international exchange of research results in the field of vocational education and training. The field faces practical problems that call for multidisciplinary solutions, and the network encourages membership from different disciplines, such as educational administration, curriculum theory, instructional theory, research methodology, educational psychology, sociology and economics.

Chair: Dr. Martin Mulder, Faculty of Educational Science and Technology, University of Twente, P.O. Box 217, NL-7500 AE Enschede,
e-mail: mulder@edte.utwente.nl

European Curriculum Researchers' Network (ECUNET)

Scope: to bring together European researchers whose work focuses on any aspects of the curriculum, including development, policy, improvement, evaluation, theory, history and internationalisation.

Chair: Prof. Jan van den Akker, Faculty of Educational Science and Technology, University of Twente, P.O. Box 217, NL-7500 AE Enschede,
e-mail: akker@edte.

Economics of Education

Scope: since any formal cooperation among education economists is lacking at European level, the research network is filling a gap by providing a forum for the continuous exchange of information and the stimulation of cooperative research efforts. This task can be expected to gain growing importance in the course of an increasing "globalisation" of problems in education and the advancing process of integration in Europe.

Chair: Dr. Manfred Weiss, German Institute for International Educational Research,
Schloss-Str. 29-31, D-60486 Frankfurt am Main,
e-mail: weissm@dipf.de

Inclusive Education Research Network

Scope: Inclusive education and research on the policies and practices of educating children with special needs in ordinary schools.

Chair: Dr. Hugh Gash, St Patrick's College,
Drumcondra, IRL-Dublin 9

Student assessment

Scope: there is a world-wide trend for assessment to take a more prominent part in education and to be used as a mechanism for change and control. This trend constitutes a considerable challenge not only to those involved in assessment development but to those involved in assessment research and who wish to see valid and reliable assessment used to support the deep and interpretative learning that is necessary for our current and future generations as well as other kinds of learning that are basic to education. Sharing issues, findings and research problems across all aspects of assessment policy and practice among those involved is important for the development of education in Europe.

Chair: Prof. Wynne Harlen, Scottish Council for Research in Education, 15 John Street, UK-Edinburgh EH8 8JR, Scotland,
e-mail: JWynne.Harlen@ed.ac.uk

ELECTRA - Electronic Learning Environment for the Continual Training and Research in ALMA

Aims: ELECTRA is a concerted effort by the four ALMA universities in the Euroregion (Rheinisch Westfälische Technische Hochschule in Aachen, Université de Liège, Limburgs Universitair Centrum in Diepenbeek-Hasselt and the University of Limburg in Maastricht) to realise a sophisticated electronic learning environment.

Further information:
http://www.unimaas.nl/~electra/electra.htm

ENTA - European Network of Trainers' Association

Address: Michael Sandrock, c/o Eloqu-Train and Consulting;
Baseler Str.;
D-7800 Freiburg

EOPEI - European Observatory for Population Education and Information

Aims: the intention of this convention is to initiate collaboration between universities, demographic research centres and educational institutes within the European region to promote and develop scientific work in the domain of population education and information. To this end, the contracting parties propose to participate in the creation of a European Observatory for Population Education and Information in relation with the European Association for Population Studies (EAPS, The Hague). The observatory shall be placed under the auspices of UNESCO.

Activities related to VET:

- to ensure that comparative research is implemented on the approaches to population questions within educational systems in Europe;
- to analyse experiences within the European regions and programmes implemented in European countries to promote and develop population education;
- to study the different facets of accessibility to demographic information in European countries and its circulation;
- to organise exchange of documentation between interested partners;
- to facilitate the co-publication of work on population education and information;
- to establish active links with similar bodies in other regions of the world.

Further information: Netherlands Interdisciplinary Demographic Institute (NIDI), The Hague

ERD - European Research Directory (CEDEFOP)

Aims: the objective is to provide vocational training policy-makers and researchers with information on research activities in all the Member States, to offer them an opportunity to publish on a broader scale the research they themselves are undertaking and to encourage transnational cooperation, both at institutional and Member State level.

Activities related to VET:
Documentation (constantly up-dated)

Address: CEDEFOP;
P.O.B. 27-Finikas;
GR-55102 Thessaloniki
Tel.: + 30 / 31 / 490 125;
Fax: + 30 / 31 / 490 117;
http://www.cedefop.gr

Contact person:
Mara Brugia (e-mail: mb@cedefop.gr)

Network on Transitions in Youth (ESF)

Aims: the long-term goal of this network (financed by the ESF - European Science Foundation up to 1996) is to advance theoretical understanding of transitions in youth, and especially of the relationships between education/training and the labour market, through the comparative analysis of regular and longitudinal surveys of transition.

Activities related to VET: Newsletter,
3 meetings:

- 1994, Seelisberg (CH): "Determinants of individual success in transitions to the labour market"
- 1995, Oostvorne (NL): "Transitions in Youth: Comparisons over time and across countries"
- 1996, Marseille (F): "Linking theory with empirical analysis in the study of Transitions in Youth"

(papers in the workshop series may be obtained from: Ms Pat Cosgrove, ESF, 1 quai Lezay-Marnésia, F-67080 Strasbourg Cedex;
Fax: + 33 / 88 37 05 32,
e-mail: pcosgrove@esf.org)

Address: Centre for Educational Sociology,
University of Edinburgh;
7 Buccleuch Place;
UK Edinburgh EH8 9LW

Contact person: Prof. David Raffe (Chair)

EURONET - European Network of Social Research Centres

Functions: Social research

Address: EURONET;
Square Ambiorix 32;
PO Box 19;
B-1040 Brussels

Additional information: Wilfried Kruse, SFS (Sozialforschungsstelle Dortmund)

EUROPEN - European Practice Enterprises Network

Aims: the task is the support of the vocational education. The Association seeks to support the international co-operation of commercial practice firms in the scope of youth education and adult education. It supports setting up National Central Offices for practice firms and co-ordinates the work of the already existing Central Offices. The exchange of information of the members of the Association concerning the development of the vocational education systems, the labour market and the economy from an international view is another important item. The Association takes part in projects and supports projects in the vocational education. It fixes minimum standards for practice firms.

Address: EURO PEN im Berufsförderungszentrum Essen e.V.;
Altenessenerstr. 80/84;
D-45326 Essen
Phone: + 49/201/3204-450/449;
Fax: + 49/201/3204-451
e-mail: europen@bfz-essen.de

Contact person: Dr. Alfons Gummersbach

EUROPROF

Character: the network was founded in October 1997 as the conclusion of the final workshop of the EUROPROF project. The project was financed by the European Commission within the strands 'surveys and analyses' of the Leonardo da Vinci action programme. The project had studied possibilities of introducing new programmes for the education of *Vocational Education and Training* professionals. The special emphasis of the project was to combine expertise on *Pedagogics of Vocational Education and Training* with expertise on *Human Resources Development*. Moreover, the project studied the possibilities of developing a common research culture that relies on such programmes and on common cornerstones.

Membership of the network is free to all institutions and organisations that undertake transnational research and development in this area of activity.

Aims:

- the development, piloting and mutual recognition of new programmes for the education of VET professionals;
- the development of a common framework and criteria for the continuing professional development of VET professionals;
- the promotion of exchange programmes for teachers, researchers and students in VET;
- the sharing of knowledge through collaborative research, workshops and publications;
- the development of shared databanks of resources and research findings and papers.

Activities related to VET: currently the network is setting up national sub-nets and promoting several project initiatives that are to be undertaken within different European cooperation programmes. The network is also developing telematic tools that support an infrastructure for *collaborative* research and development work and for real-time dissemination.

Contact person and address: Graham Attwell;
ITB Institut Technik & Bildung;
Universität Bremen;
Wilhelm-Herbst-Str. 7;
D-28359 Bremen
Tel.:+49/ 421/ 218-4626;
Fax: +49/ 421/ 218-4637
e-mail: attwell@uni-bremen.de

EUROSTEP - European Association of Users of Satellites in Training and Educational Programmes

Functions: innovatory/pilot projects;
research;
information/documentation;
consultancy provision of telematic services for course providers

Activities related to VET: EUROSTEP is a European association of over 100 institutions and companies active in the field of education and training which use multi-media and satellites for the dissemination of education and training, designed for use in formal and non-formal education.

Address: EUROSTEP;
P.O. Box 11112;
NL-2301 Leiden
Tel.: +31 / 71 / 120893;
Fax: +31 / 71 / 134545

Contact person:
Raymond Benders, secretary general

FOREM/CIDOC - Office Communautaire et Régional de la Formation Professionnelle et de L'Emploi / Centre Intercommunautaire de Documentation pour la Formation Professionnelle

Aims: to collect, process and diffuse information on vocational training for practitioners and policy-makers

Activities related to VET: this intercommunity documentation centre coordinates a network within Belgium consisting of training organisations, social partners, social and economic organisations, research centres, sectoral bodies, regional development agencies and specialised documentation centres. The collected information is processed to CEDEFOP's documentation service and to the European Research Directory. ICODOC-CIDOC also produced derived information products for its network such as the bilingual "Bulletin signalétique des publications belges sur la formation professionelle" and the annual compendium on "ongoing and finished research on vocational training in Belgium" (in Dutch and French)

Address: Bd. Tirou 104;
B-6000 Charleroi
Tel.: +32 / 71 206174;
Fax: +32 / 71 206198;
http://www.forem.be

Contact persons:
Jean-Pierre Grandjean; Sigrid Dieu
(e-mail: jeanpierre.grandjean@forem.be;
sigrid.dieu@forem.be)

FORUM for European Research in Vocational Education and Training

Aims:

- to develop an agenda for transnational research themes in Europe;
- to generate a European identity ("European dimension") in VET;
- to further develop transnational research methodologies towards a multicultural research concept and promote collaborative research;
- to establish a European community of practice in VET research as a regional innovation agency;
- to disseminate the outcomes of research projects, particularly with a transnational approach;
- The European Commission is currently funding a major project within its TSER programme. Thematic work-packages of this project related to VET are:
- common practices and values;
- VET and the labour market;
- organisational changes required of vocational training institutions;
- in-company training and school to work transitions
- learning organisations;
- young researchers.

Address: ITB Institut Technik & Bildung;
Universität Bremen;
Wilhelm-Herbst-Str. 7;
D-28359 Bremen

Contact person: Michael Kuhn
Tel.: + 49 / 421 / 218-4632;
Fax: + 49 / 421 / 218-9019;
e-mail: mkuhn@zfn.uni-bremen.de

GAPE - German Association for Political Economy

Aims: GAPE is an association of economists from Central Europe. It organises two meetings each year on selected topics in Economics. The intention of these meetings is the scientific exchange amongst the members of GAPE and with other interested scientists.

Further information:
http://www.unimaas.nl/~akpoloek

IFTDO - International Federation of Training and Development Organisations

Aims: the Federation exists to develop and maintain a world-wide network of information and human resources dedicated to developing, expanding and transferring the knowledge, technology and impact of human resources development throughout national and multinational professional, educational, governmental and commercial organisations and their members.

Address: IFTDO;
PO Box 33213;
USA-Washington DC 20033-0213
Tel.: +1 / 202 333 1811;
Fax: +1 / 202 342 6055

Contact person:
David Waugh, executive director

JANUS - European Network for the Dissemination of Knowledge and Know-how in Using Telematics for Education and Training

Aims: the association disseminates knowledge and know-how in the use of telematics amongst organisations in the education and training sector, develops members' knowledge of the educational, regulatory and cost issues surrounding the use of telematic networks in education and training.

Address: JANUS;
PO Box 2960;
NL-6401 DL Heerlen
Tel.: +31 / 45 / 762214;
Fax: +31 / 45 / 741473

Contact person:
Peter Bates, executive officer

RACINE - Réseau d'Appui et de Capitalisation des Innovations Européennes

Aims: to respond to the increase in Community VET programmes by facilitating access for French oerators and establish know-how as regards the coordination of such programmes this significantly improving the French presence within the EU and the valuation of their benefits in France.

Address: Association RACINE;
73-77 rue Pascal;
F-75013 Paris
Tel.: + 33 / 1 / 44 08 65 10;
Fax: + 33 / 1 / 44 08 65 11;
e-mail: info@racine.asso.fr;
Internet: http://www.racine.asso.fr/html

SATURN - Europe's Open Learning Network

Main functions: Innovatory and pilot projects; information and documentation; consultancy; in the field of open learning, learning methods, university-enterprise relationships

Address: SATURN;
Keizersgracht 756;
NL-1017 EZ Amsterdam
Tel.: +31 / 20 / 6382441;
Fax: +31 / 20 / 6382879

Contact person: Laurent Porte, secretary general

SENECA - Special Exchange Network for European Cooperation Actions

Aims: The SENECA network is the basis for the placement and exchange project STEP. SENECA serves the improvement of cooperation between educational institutions and enterprises and, in particular, the promotion of mobility, by establishing and strengthening networks between educational centres and enterprises in various European states.

SENECA establishes an innovative database with Internet access. Its aim is to simplify training period search and student selection.

Address: Fraunhofer-Institut Integrierte Schaltungen;
UETP IIS Erlangen;
Am Weichselgarten 3;
D-91058 Erlangen
Tel.: +49 / 9131 / 776-115;
Fax: +49 / 9131 / 776-199;
e-mail: UETP@iis.fhg.de;
Internet: http://uetp.iis.fhg.de

SKILLNET - The Skills and Enterprise Network

Aims: the Skills and Enterprise Network offers a convenient way to keep up to date with the latest developments in research, evaluation and the labour market

Address: Skills and Enterprise Network;
Box 12;
West P. D. O.;
Leen Gate, Lenton;
UK-NG7 2GB Nottingham;
Tel.: + 44 / 115 / 924 40 90;
e-mail: sen.dfee.mf@gtnet.gov.uk

Further information: http://www.open.gov.uk/dfee/skillnet/senhome.htm

VDAB/ICODOC - Flemish Employment and Vocational Training Service / Inter-community Documentation Centre on Vocational Training

Aims: to gather, process and disseminate information and documentation on vocational training for practitioners and policy-makers

Activities related to VET: since 1985 a Belgian correspondents' network has been progressively developed, consisting of educational and training institutions, social partners, trade unions and employers' organisations, research and documentation centres, libraries and other social and economic institutions that take an interest in vocational training. On a more specific level a research network has been developed consisting of (inter-) university and higher education research centres, sectoral institutions, labour market research centres, provincial councils, etc. These institutions systematically exchange information and documentation with ICODOC. The collected information is processed and sent to CEDEFOP's database services. ICODOC also produces derived information products for internal (VDAB) use and for its networks such as the Periodical Surveys reporting on the most recent Belgian publications on vocational training, and, especially in this research context, an annual compendium on ongoing and finished research on vocational training in Belgium.

Address: VDAB/ICODOC;
Keizerslaan 11;
B-1000 Brussels
Tel.: +32 / 2 506 04 58 ;
Fax : +32 / 2 506 04 28 ;
e-mail: vdab@vdab.be;
pdsmet@vdab.be;
Internet: http://www.vdab.be

Contact persons: Philippe De Smet;
Reinald van Weyd

The Work Process Knowledge network

Character: the network was founded as an informal network in 1994 and has held three conferences (Manchester 1994, Paris 1995 and Bremen 1996). The network consists of ten research institutes from ten EU Member States. The members represent interdisciplinary traditions of research on work, technology and organisations.

Aims: the network is concerned with changes in the structure of employment that occur when organizations acquire greater flexibility and introduce new technologies in response to the pressures of competition. It focuses on the knowledge needed by the workforce to adapt to these changes. The overall objective is to develop policies for facilitating the acquisition of this knowledge through human resource development, the design of new technologies and organisational development.

Activities related to VET: recently the network received funding from the European Commission (from the TSER programme) for a two year project "Work process knowledge in technological and organisational development" (WHOLE).

Objectives of theWHOLE project are:

- to identify critical changes in working practices associated with technological and organizational development, especially those likely to contribute to the European 'skills gap' debates;
- to integrate European traditions for conceptualising 'work process knowledge', including such topics as understanding work processes and constructing knowledge in the workplace;
- to describe and illustrate best practice for facilitating the acquisition of work process knowledge, including new approaches to learning in the workplace, the design of new technology itself and organizational development within enterprises;
- to generate and analyze policy options for facilitating acquisition of the knowledge needed for workers to participate fully in technological and organizational change in response to the pressures of competition;
- to make contributions to TSER research projects, especially those dealing with (a) knowledge in work environments, (b) cognitive aspects of the design and application of new technologies in education and training, and (c) the determination of labour-market requirements concerning vocational training.

Contact person and address:
Prof. N.C. Boreham;
Human Factors Research Group;
Centre for Social Ethics and Policy;
Humanities Building;
University of Manchester;
Oxford Road;
UK-Manchester M13 9PL
Tel.: + 44 / 161 / 275 3487;
Fax + 44 / 161 /275 3712;
e-mail: BOREHAM@fs1.ed.man.ac.uk

2 Basic legislation on VET in the Member States

AUSTRIA
Berufsausbildungsgesetz bis BGBL Nr. 67/1997.
In: Berufsausbildung, Wirtschaftskammer Österreichs, WK Wien 1997, pp. 5-72.

BELGIUM
Contrat emploi-formation, arrêté royal n° 495 du 31 décembre 1986. Moniteur belge, 3 janvier 1987, pp.569-574
Octroi du congé-éducation payé dans le cadre de la formation permanente des travailleurs.
Moniteur belge, 24 janvier, 1985, pp. 739-751.

DENMARK

Bekendtgoerelse nr. 814 af 11. september 1996 af lov om erhvervsuddannelser. [Regulation on vocational training]. Copenhagen: Undervisningsministeriet. 1996

GERMANY

Berufsbildungsgesetz vom 14. August 1969. BGBl.I. S. 1112;
Bundesminister für Bildung und Wissenschaft. BMBW Bonn 1994. 65 p.
Gesetze zur Berufsbildung. Deutscher Industrie- und Handelstag. DIHT. Bonn 1992

GREECE

Nomos 2009/1992. Ethniko Systima Epangelmatikis Ekpaidefsis kai Katartisis kai alles diataxeis. [Law 2009/ 1992. National System of Vocational Education and Training and other provisions] Ypourgeio Ethnikis Paideias kai Thriskevmaton. YPEPTH. Athens 1992 (Efimeris tis Kyverniseos tis Ellinikis Dimokratias. 18/t.A'/14-2-1992)

SPAIN

Ley Orgánica 1/1990 de Ordenación General del Sistema Educativo (LOGSE). Boletín Oficial del Estado. 238 (4 Oct.). 1990. p. 28927-28942
II Acuerdo Nacional de Formación Continua. Boletín Oficial del Estado. 28 (1 Feb.). 1997. p. 3250-3255
Acuerdo Tripartito sobre Formación Continua. Boletín Oficial del Estado 117 (16 mayo). 1997. p. 15383-15385

FINLAND

Laki ammatillisista oppilaitoksista (487/1987) [Act on Vocational institutions]. In: KAUPPAKAARI O. *Opetustoimen lainsäädäntö 1997.* Helsinki: Lakimiesliiton Kustannus. 1997
Laki ammattikorkeakouluopinnoista (255/1995) [Act on Studies at AMK Institutions]. In: KAUPPAKAARI O. *Opetustoimen lainsäädäntö 1997.* Helsinki: Lakimiesliiton Kustannus. 1997. p. 120.
Laki ammatillisista aikuiskoulutuskeskuksista (760/1990) [Act on Vocational Adult Education Centres] In: KAUPPAKAARI O. *Opetustoimen lainsäädäntö 1997.* Helsinki: Lakimiesliiton Kustannus. 1997
Ammattitutkintolaki (306/1994) [Act on Vocational Qualifications] In: KAUPPAKAARI O. *Opetustoimen lainsäädäntö 1997.* Helsinki: Lakimiesliiton Kustannus. 1997

FRANCE

Le droit de la formation continue et ses sources. Centre INFFO. Département juridique. Paris 1996. 42 p.
Les fiches pratiques de la formation continue. 1997. Centre pour le développement de l'information sur la formation permanente. Centre INFFO. Paris 1997

IRELAND

Labour Services Act (n. 15) 1987. Dublin: The Stationery Office. 1987. 63 p.

ITALY

Legge19 gennaio 1955. n. 25. Disciplina dell'apprendistato. Gazzetta ufficiale della Repubblica italiana. 14 febbraio. n. 36
Legge21 dicembre 1978. n.845. Legge-quadro in materia di formazione professionale. Gazzetta ufficiale della Repubblica italiana. 30 dicembre. n. 362
Filadoro. C;
Ugliano S: Il contratto di formazione e lavoro. Milano: Giuffré. 1992. xi
Legge19 luglio 1993. n. 236. Conversione in legge. con modificazioni. del decreto-legge20 maggio 1993. n. 148. recante interventi urgenti a sostegno dell'occupazione. Gazzetta ufficiale della Repubblica italiana. 19 luglio. n. 167

LUXEMBOURG

Loi du 21 mai 1979 portant organisation de la formation professionnelle et de l'enseignement secondaire technique. modifiée par la loi du 30 mai 1984.
Loi du 4 septembre 1990 portant réforme de l'enseignement secondaire technique et de la formation professionnelle continue. Luxembourg. 2 Circuit de la Foire internationale. B.P. 1604 (Kirchberg). L-1016

NETHERLANDS

Adult and vocational education Act: main outline. (Adult and vocational education Act:1). Ministerie van Onderwijs. Cultuur en Wetenschappen: Zoetermeer. 1996

NORWAY

Act no. 13 of 23 May 1980 relating to vocational training. Oslo: Ministry of Education. Research and Church Affairs. 1994

PORTUGAL

Lei de Bases do Sistema Educativo, Lei n. 46/86, de 14 de Outubro 1986.

Decreto-Lei 205/96, D.R. n. 248, I Série A de 25/10/96 - aprova o novo regime jurídico de aprendizagem

Acordo de Concertação Estratégica: 1996-1999, 2ª ed.

Conselho Económico e Social, CES, Lisboa: CES, 1996

Acordo de Concertação Social de Curto Prazo. Conselho Económico e Social, CES, Lisboa: CES, 1996

SWEDEN

Skollag (SFS 1985:1100) [The School Act Swedish Code of Statutes 1985:1100] Stockholm: Allmänna förlaget, 1986

Förordning (1992:403) om kommunal vuxenutbildning [Municipal Adult Education Ordinance, Swedish Code of Statutes 1992:403], Stockholm: Allmänna förlaget, 1993

UNITED KINGDOM

Competitiveness: forging ahead. White Paper 2. Department of Trade and Industry, DTI, 1995, London 1995

Education and training for the 21st century, White Paper. London 1991

3 VET Systems in the EU: Sources for information

3.1 CEDEFOP Monographs on VET systems in the EU Member States

(note: indicated is the year of first publication)

Austria:
1995, 127 p.;
language: EN;
Cat. No. HX-92-95-176-EN-C (new version is about to be edited)

Belgium:
1994, 128 p.;
languages: NL EN FR IT;
Cat. No.: HX-78-93-265-x-C

Denmark:
1994, 115 p.;
languages: DA FR ES;
Cat. No.: HX-81-93-785-x-C

France:
1993, 124 p.;
languages: DA FR EN DE PT IT ES;
Cat. No.: HY-75-92-954-x-C

Germany:
1994; 119 pp.;
languages: DE EL EN ES FR NL PT;
Cat. No.: HX-81-93-826-x-C

Greece:
1994; 102 pp.;
languages: EL EN FR;
Cat. No.: HX-81-93-793-x-C

Ireland:
1994; 97 pp.;
languages: DE ES FR;
Cat. No.: HX-81-93-818-x-C

Italy:
1994; 132 pp.;
languages: DE EN IT;
Cat. No.: HY-75-92-970-x-C

Luxembourg,
1994; 70 pp.;
languages: DE EN ES FR PT;
Cat. No.: HX-81-93-834-x-C

Netherlands,
1994; 92 pp.;
languages: DE EN FR NL;
Cat No.: HY-75-92-946-x-C

Portugal,
1995; 94 pp.;
languages: DE EN FR PT;
Cat. No.: HX-81-93-810-x-C

Spain,
1995; 93 pp.;
languages: EN ES FR;
Cat. No.: HX-81-93-802-x-C

United Kingdom.
1993; 109 pp.;
languages: DE EN ES IT PT
Cat. No.: HY-75-92-962-x-C ()

(all these monographs are about to be updated)

Finland.
1997; 135 pp.;
languages: EN FI;
Cat. No.: HX-06-97-577-x-C

Austria, Norway and **Iceland** are about to be edited

3.2 Description of education and training systems and policies on the European level

ANT, M.; KINTZELE, J.; HAECHT, V.; WALTHER, R.: Reporting system on access, quality and volume of continuing vocational training in Europe. Formation Continue en Europe, FORCE; Institut National pour le Développement de la Formation Professionnelle Continue, INFPC, Neuwied: Kriftel, 1996, 344 p.; languages: EN FR DE

BRANDSMA, J.; KESSLER, F.; MÜNCH, J.: Continuing Vocational Training: Europe, Japan and the United States,
Utrecht 1996, 363 p.

CEDEFOP: Structures of the educational and initial training systems in the Member States of the European Union. The European Education Information Network, EURYDICE;
Luxembourg 1995, 458 p.;
languages: EN FR DE ES EL

CENTRE INFFO: Formation dans les Pays de l'Union Européenne, 2 volumes, Paris 1996

COUNCIL OF THE EUROPEAN COMMUNITIES - General Secretariat European education policy statements, Luxembourg 1987, 179 p., languages: EN FR DE DA ES EL DA IT NL PT
Supplement 1 (June 1988)
Supplement 2 (1990-1992)
Supplement 3 (1993-1996)

DIPF (German Institute for International Educational Research): Database BELLA (Information on Educational systems, research activities, institutions and organisations, migration).
Contact: P. Birke (Tel.: +49 / 69 / 24708-426;
e-mail: birke@dipf.de);
R. Martini (Tel.: +49 / 69 / 24708-310;
e-mail: martini@dipf.de)

EUROPEAN COMMISSION (Redaktionelle Leitung: W. Kreft): Europäisches Handbuch für Berufsberater <European Handbook for Vocational Counsellors>, Bad Honnef 1992

EUROPEAN COMMISSION; EUROSTAT; CEDEFOP: Key data on vocational training in the European Union.
Luxembourg 1997, 132 p.;
languages: EN FR DE

KAISER, A; FEUCHTHOFEN, J. E.; GUETTLER: Europahandbuch Weiterbildung. European Manual of Continuing Education. Manuel Européen de la Formation Continue. Neuwied, Kriftel, Berlin, 1996;
languages: DE EN FR

LAUTERBACH, U. with MITTER, W.: Internationales Handbuch der Berufsbildung. <International Handbook of Vocational Education and Training>. Carl Duisberg Gesellschaft, CDG. Deutsches Institut für Internationale Pädagogische Forschung, Baden-Baden 1995 (Schriftenreihe der Carl Duisberg Gesellschaft e.V., n° 9);
language: DE

MERLLIE, C.; LAIRRE, V.; GAUTIER-MOULIN, P. et al.: La formation dans les pays de l'Union européenne, hormis la France, incluant l'Islande et la Norvège en raison de leur appartenance à l'Espace Economique Européen. Paris: Centre INFFO, 1997;
language: FR

OECD: Education at a glance, Paris (various issues);
language: EN

4 Programmes and initiatives at Community and international level related to education and training

4.1 EU training action programmes, scholarships and exchanges

SOCRATES

The SOCRATES programme, begun in 1995, is an action programme for cooperation in the field of education.[1] The programme applies to all types and levels of education from nursery schools up to and including doctoral level at university. SOCRATES also includes initiatives such as COMENIUS, EURIDYCE and ARION. The network of national information centres (NARIC) is to improve the mutual recognition of academic degrees and to support mobility of students, teachers and researchers. EURIDYCE aims to provide information on national systems of education and training.

The SOCRATES programme is divided into three strands:

Higher Education:
- Promotion of the European dimension in higher education institutions
- Thematic networks
- Financing of mobility grants for students

School Education:
- Co-operation between schools
- Promotion of schooling of children of migrant workers and gypsies
- Updating the skills of educational staff

Horizontal Measures:
- Promotion of language skills in the Community
- Promotion of information and communication technologies and open and distance education and learning
- Adult education
- Promotion of information and exchange of experience.

Contact:
SOCRATES and Youth Technical Assistance Office
70 rue Montoyer:
B-1040 Brussels
Tel.: +32/2/233 01 11;
Fax: +32/2/233 01 50
e-mail: info@socrates-youth.be
or
European Commission/Directorate General XXII
Education, Training & Youth;
Directorate A
200 rue de la Loi (Belliard 5-7);
B-1049 Brussels
Tel.: +32/2/295 83 82;
Fax: +32/2/299 41 50
e-mail: alan.simth@dg22.cec.be

LEONARDO DA VINCI

This programme, begun in 1995, builds on the basis of previous vocational training measures (e.g. COMETT, EUROTECNET, FORCE, PETRA and parts of LINGUA). It has a particular emphasis on training as applied to new industrial changes.[2] Community support is available for the following three strands:

› *Strand I:* Support for the improvement of vocational training systems and arrangements in the Member States
I.1.1 Transnational pilot projects
I.1.2 Transnational placements and exchange programme

› *Strand II:* Support for the improvement of vocational training measures including university/industry co-operation concerning undertakings and workers
II.1.1 Transnational pilot projects
II.1.2 Transnational placements and exchange programme

› *Strand III:* Support for the development of language skills, knowledge and the dissemination of innovation in the field of vocational training

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[1] Council and European Parliament Decision No. 819/95/EC published in OJ L 87, 20 April 1995.

[2] Council Decision establishing an action programme for the implementation of a European Community vocational training policy, LEONARDO da Vinci, published in OJ L 340, 29 December 1994.

III.1 Co-operation with a view to improving language skills
III.2 Studies
III.3 Dissemination of innovation
III.4 Support measures

Contact:
LEONARDO Technical Assistance Office
9 Avenue de l'Astronomie:
B-1030 Brussels
Tel.: +32/2/227 01 00:
Fax: +32/2/227 01 01
e-mail: leonardo@mhsg.cec.be
or
European Commission/Directorate General XXII
Education, Training & Youth:
Directorate B
200 rue de la Loi (Belliard 5-7):
B-1049 Brussels
Tel.: +32/2/295 72 02:
Fax: +32/2/299 57 04
e-mail: leonardo@dg22.cec.be

YOUTH FOR EUROPE

An action programme for the promotion of youth exchanges in the Community began in 1988, formerly under the title of "YES for Europe" but later changed to Youth for Europe. The new programme is designed to incorporate into a single programme all Community actions in the youth field. New items emphasise the need to combat sexual and racial discrimination and xenophobia and ensure the inclusion of disadvantaged young people.[3] Community support is given for the following actions:

- Youth exchanges and mobility
- Spirit of initiative, creativity and solidarity among young people
  - Youth initiatives
  - Periods of voluntary service
- Youth workers
- Co-operation between Member State Structures
- Exchanges with non-member countries
- Information for young people and youth research

Contact:
Structure for Operational Support
35 rue des Drapiers:
B-1050 Brussels
Tel.: +32/2/549 55 90:
Fax: +32/2/549 55 99
e-mail: SOSforEVS@compuserve.com
or
European Commission/Directorate General XXII
Education, Training & Youth:
Directorate C
200 rue de la Loi (Belliard 5-7):
B-1049 Brussels
Tel.: +32/2/295 23 27:
Fax: +32/2/299 41 58
e-mail: vol@dg22.cec.be

YOUTHSTART

One of the main conclusions of the Commission White Paper on "Growth Competitiveness and Employment" (1993) was the need to stimulate opportunities for more young people to participate in the labour market. The YOUTHSTART initiative was proposed under the 1994-1999 > Structural Funds to encourage actions in Member States leading to a long term guarantee for young people under the age of 20 of access either to full-time employment or to a recognised form of education or training.[4]

Contact:
European Commission/Directorate General for Employment:
Industrial Relations and Social Affairs
200, rue de la Loi
B-1049 Brussels
Tel.: +32/2/295 63 58:
Fax: +32/2/296 62 80
or
EUROPS
2/3 Place du Luxembourg:
B-1040 Brussels
Tel.: +32/2/511 15 10:
Fax: +32/2/511 19 60

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3) Council and European Parliament Decision No 818/95/EC published in OJ L 87, 20 April 1995

4) The scheme is described in the proposals for Community initiatives published in OJ C 180, 1 July 1994 laying down guidelines for a Community Initiative on Employment and the Development of Human Resources. New guidelines are published in OJ C 200, 10 July 1996

EMPLOYMENT - NOW (EQUAL EMPLOYMENT OPPORTUNITIES FOR WOMEN)

Although much progress has been made in terms of equality of treatment between the sexes, the employment opportunities for women are still much lower than for men. With the completion of the Single Market and further technological development, this trend will continue. NOW reinforces programmes such as IRIS, ILE and Childcare Network. It also forms an integral part of the implementation of the fourth medium-term programme on equal opportunities (1996-2000) (OJ L 335, 30 December 1995)[5] NOW has the objective of reducing unemployment among women and improving the position of those already in employment through the promotion of equal opportunities, in particular with regard to training measures, access to future-oriented occupations and to management positions.

Contact:
European Commission/Directorate General for Employment;
Industrial Relations and Social Affairs
200, rue de la Loi;
B-1049 Brussels
Tel.: +32/2/295 42 95;
Fax: +32/2/295 65 06
or
EUROPS
2/3 Place du Luxembourg;
B-1040 Brussels
Tel.: +32/2/511 15 10;
Fax: +32/2/511 19 60

EMPLOYMENT - HORIZON

According to the World Health Organisation (WHO), the handicapped population of the Community is around 30 million. It is recognised that such persons face serious problems in obtaining employment. This situation will become more serious with the continuing technological development and the ensuing reduction of non-skilled jobs. Within the framework of the >Community Structural Funds 1994-1999 this initiative forms part of the Employment Community Initiative along with the >NOW and >YOUTHSTART programmes.[6] The objective of HORIZON is to improve the conditions for access to the labour market of the handicapped.

Contact:
European Commission/Directorate General for Employment;
Industrial Relations and Social Affairs
200, rue de la Loi;
B-1049 Brussels
Tel.: +32/2/295 90 44
or
EUROPS
2/3 Place du Luxembourg;
B-1040 Brussels
Tel.: +32/2/511 15 10;
Fax: +32/2/511 19 60

INTEGRA

In 1996 it was decided to create a new strand of the Employment Initiative dedicated to helping disadvantaged groups previously covered by HORIZON such as the homeless, long term unemployed, itinerants, gypsies, ex-prisoners and substance abusers.[7]

Contact:
European Commission/Directorate General for Employment;
Industrial Relations and Social Affairs
200, rue de la Loi;
B-1049 Brussels
or
EUROPS
2/3 Place du Luxembourg;
B-1040 Brussels
Tel.: +32/2/511 15 10;
Fax: +32/2/511 19 60
e-mail: horizon@europs.lrt.be

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[5] The initiative was drawn up by the European Commission under Article 11 of Regulation (EEC) No 4253/88. The Guidelines were published in OJ C 327, 29 December 1990. Under the 1994-1999 Structural Funds the scheme has been broadened. New guidelines are published in OJ C 200, 10 July 1996.

[6] The initiative was drawn up by the European Commission under Article 11 of Regulation (EEC) No 4253/88. The Guidelines were published in OJ C 327, 29 December 1990. These are expanded for the 1994 to 1999 period by the proposal published in OJ C 180, 1 July 1994 laying down guidelines ... a Community Initiative on Employment and Development of Human Resources aimed at promoting employment growth mainly through the development of human resources. New guidelines are published in OJ C 200, 10 July 1996.

[7] Guidelines are published in OJ C 200, 10 July 1996.

Observation system for innovation in vocational training

With the technical support of CEDEFOP, the European Commission intends to establish a European observation system on innovative practices in the field of VET at the European and national level. In order to capitalise and to support the transfer of innovation, the observation system should:

- provide and exchange information on concrete innovative cases taking into account the context in which they have been introduced, demonstrating their impact and problem solving capacity;
- organise the exchange of views and experiences between actors from different EU countries on concrete innovative cases;
- launch a number of mechanisms and tools capable of collecting, assessing, diffusing and making active use of information on innovations;
- stimulate co-operation and the transfer of innovations by and between actors, experts, practitioners, policy makers of different organisations at the national and trans-national level.

(for further information contact the European Commission/DG XXII or CEDEFOP)

4.2 TSER (Targeted Socio-Economic Research programme)

"Following from the European Commission's White Paper on 'Growth, Competitiveness and Employment' (1993), the activities of the TSER programme (within the Fourth Framework Programme of the Community[8]) aim at producing new knowledge and elucidating decision-making in future at decentralised, national or Community level to lay the foundations for sustainable economic and social development of Europe's economies enabling them to withstand international competition and create jobs. Their objective is thus to develop, through a reinforcement of research networks, a shared knowledge base on the challenges facing Europe, based on research and other work in three interrelated areas:

- evaluation of science and technology policy options in Europe;
- research on education and training;
- research into social integration and social exclusion in Europe."

The duration of the TSER programme is 1994-1998; within this period, three calls for proposals have been launched in 1995, 1996 and 1997. An evaluation of the management and execution of the programme and of the implementation of the activities is carried out by independent expert evaluators.

Following projects were contracted within area II (research on education and training/VET):

First Call Projects, 1995

1. Effectiveness of labour market oriented training for the long-term unemployment
2. New job skill needs and the low-skilled
3. Delos - Developing Learning Organisation models in SME clusters
4. Schooling, training and transitions: an economic perspective
5. In-company training and learning organisations

Second Call Projects, 1996

1. Governmental policies and programmes for strengthening the relationship between higher education institutions and the economy
2. The role of Human Resource Development (HRD) within organisations in creating opportunities for life-long learning: Concepts and practices in seven European countries
3. A comparative analysis of transitions from education to work in Europe
4. Higher education and graduate employment in Europe
5. Forum for European research in vocational education and training
6. Changing working life and training of older workers
7. Work experience as an education and training strategy: New approach for the 21st century

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[8] In order to coordinate and concentrate research and technology policies (Art. 130f to 130p of the EC Treaty), the Community sets up a perennial framework programme. The Fourth Framework Programme covers the period 1994-1998, the Fifth Framework Programme will cover the period 1999-2003.

Third Call, 1997: Objectives and tasks[9]

1. Lifelong learning and educational goals
2. Implications of societal developments for education and training systems
3. Educational implications of the European integration process
4. Education, training, labour market and economic growth
5. Education's and training's contribution to fostering innovation

Within the preparation of the Fifth Framework Programme (1999-2003) the European Commission proposes three thematic and three horizontal activities.

Thematic programmes refer to:
- research in natural and ecological resources;
- information society;
- competitiveness and sustainable development.

Horizontal programmes are:
- ensuring the international position of European research;
- innovation and inclusion of SMEs;
- development of human resource potential.

4.3 The Structural Funds and Regional Aid

The Community Structural Funds (CSF) amount to about one third of the total Union budget. They have the overall objective of reducing disparities between the levels of development of the various regions.

The Structural Funds comprise:

- the *European Regional Development Fund* (ERDF), which was set up in 1975 to help reduce imbalances in the Community;
- the *European Social Fund* (ESF), which has the task of promoting job opportunities for workers;
- the *European Agricultural Guidance and Guarantee Fund* (EAGGF) Guidance section which, as part of the reform of the Common Agricultural Policy, aims to speed up the adadaptation of agricultural structures and to contribute to the development of rural areas;
- the *Financial Instrument for Guidance in the Fisheries Sector* (FIFG) established in 1994 designed to provide aid for those areas affected by cutbacks in fisheries.
- Community loans, particularly those granted by the European Investment Bank and the European Coal and Steel Community, also have an increasing role to play in supporting the European structural policy. A separate *Cohesion Fund* was proposed under the draft Maastricht Treaty to support the poorer Members of the Union.

The objectives of the Structural Funds are:

Objective 1: Promoting the development and structural adjustment of the regions whose development is lagging behind (in these areas health and education projects are also now eligible);
Objective 2: Converting the regions, frontier regions or parts of regions (including employment areas and urban communities) seriously affected by industrial decline and decline in fishing activities;
Objective 3: Combating long-term unemployment and facilitating the integration into working life of young people and those socially excluded from the labour market: promotion of equal opportunities for women and men;
Objective 4: Facilitating the adaptation of workers to industrial changes and to changes in production systems through training;
Objective 5: Promoting rural development by:
5a speeding up the adjustment of agricultural structures in the framework of the reform of the common agricultural policy, including aid to modernise and restructure fisheries;
5b facilitating the structural adjustment of rural areas;
Objective 6: To provide aid to those areas of Finland and Sweden which are sparsely populated.

Community Initiatives

The Community initiatives introduced as part of the reform of the Structural Funds are intended to complement the measures contained in the CSFs and so help achieve the overall objectives of the strengthening of economic and social cohesion. They are proposed by the Commission rather than the Member States.

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[9] The deadline for proposals was the 15 January 1998

Employment and development of human resources

This initiative proposed by the Commission in 1994 incorporates action in the following areas:

- Employment/NOW (see above) is aimed at the development of equal opportunities for women in the labour market. The target groups now include women faced with social exclusion, women at work who are threatened with unemployment and women in education and the public sector.
- Employment/HORIZON (see above) actions include training and job creation. The initiative is aimed at helping the disabled.
- Employment/YOUTHSTART (see above) is aimed at promoting access to work and continuing education for the under twenties.

ADAPT

This initiative was implemented in 1994 with a view to facilitating the adaptation of workers to industrial change and will apply throughout all areas of the Community. Guidelines were published in OJ C 180, 1 July 1994. The objectives include:

- accelerating the adaptation of the workforce to industrial change;
- increasing the competitiveness of industry, services and commerce;
- preventing unemployment by developing the workforce through improving qualifications and their internal and external flexibility and ensuring greater occupational mobility;
- accelerating the development of new jobs and new activities particularly labour intensive ones;
- including exploiting the potential of SMEs.

Small and Medium Sized Enterprises

The initiative will concentrate on seven priority areas:

- improvement of production and organisation systems;
- environmental and energy saving measures;
- strengthening co-operation between SMEs and research centres;
- access to new markets in the Community and beyond;
- developing co-operation and networks between SMEs and principals, subcontractors and clients;
- improving professional qualifications;
- helping SMEs gain access to financing and loans.

European Social Fund

The European Social Fund (ESF) is an employment fund, originally established under the Treaty of Rome. Article 123 of the Treaty describes its purposes as "to improve employment opportunities for workers in the Common Market and to contribute thereby to raising the standard of living." The European Social Fund still has the same aims and objectives as stated in the Treaty of Rome and, in general terms, it will still allow for the vocational training of the same priority groups as before.

Contact:
European Commission/Directorate General for Employment, Industrial Relations and Social Affairs
200, rue de la Loi;
B-1049 Brussels
Tel.: +32/2/296 07 97;
Fax: +32/2/296 97 70

4.4 Cooperation with the countries of Central and Eastern Europe (CCEE)

The PHARE programme supports the economic re-structuring of the CCEEs among else by participation in the SOCRATES and LEONARDO programmes.

TACIS is a programme which allows a co-financing of research projects, including also reforms of the education and training systems. TEMPUS II (Trans-European Cooperation Scheme for Higher Education) is part of PHARE and TACIS.

(For further information concerning cooperation in vocational education and training with the CCEEs respectively other accession countries contact the European Training Foundation (ETF), Turin; address: see chapter 1.1 above)

4.5 OECD research programmes 1996-1998 on human resource development

Following priorities have been set within the OECD programmes:

1. **The transition from education to work.** This is an area where it can be valuable to look on the experiences of different countries, e.g. the apprenticeship system in German-speaking countries.
2. **Continued learning over the life-cycle**, whether in a work or a social context. In particular, there is an interest in financial mechanisms and partnership arrangements that support lifelong learning, and in new technologies that make information and teaching more accessible.
3. **The way in which workplaces are organised to create "learning organisations"**. Here the contrast between cultures - for example North American, European and Asian patterns of work organisation - can be instructive.
4. **The Programme on Educational Building** (PEB) addresses all issues related to providing a quality educational infrastructure in a cost-effective way.
5. **The OECD programme on Institutional Management in Higher Education** (IMHE) is an international forum serving administrators, researchers and policy makers in higher education.

5 Sources for international statistics on VET

Note that the organisations mentioned below also offer access to their database through diskettes, CD-ROM or the Internet. For further information contact the organisations directly.

Web-sites:
European Commission: http://europa.eu.int
Eurostat: http://europa.eu.int/en/comm/eurostat/serven/home.htm
CEDEFOP: http://cedefop.gr
ILO: http://www.ilo.org
OECD: http://oecd.org/statlist.htm
UNESCO: http://unescostat.unesco.org

selected statistical publications:
European Commission: Employment in Europe, Luxembourg
European Commission: European economy. Reports and studies, Luxembourg
European Commission; Eurostat: Education across the European Union. Statistics and indicators, Luxembourg
European Commission; Eurostat: Education and training, Luxembourg
European Commission; Eurostat: Labour Force Survey, Luxembourg
European Commission; Eurostat; CEDEFOP: Key data on vocational training in the European Union, Luxembourg
ILO: Yearbook of Labour Statistics, Geneva
OECD: Education at a glance, Paris
OECD: Employment outlook, Paris
OECD: Labour Force statistics, Paris
UNESCO: Statistical Yearbook, Paris

6 International Standard Classification of Education (ISCED)

The International Standard Classification of Education (ISCED) was designed by UNESCO in the early seventies and adopted in 1978. It was "to serve as an instrument suitable for assembling, compiling and presenting statistics of education both within individual countries and internationally".

However, in making international comparisons, it is important to take account of the numerous differences in the national education and training systems. Moreover, ISCED no longer adequately covers the changing structure of the education and training systems. In December 1997, UNESCO agreed on a new ISCED.

6.1 ISCED (previous version)

The description of the "old" ISCED levels (Eurostat statistics) are:[10]

ISCED 0 (pre-primary education)
Education preceding primary education. In the vast majority of cases, it is not compulsory.

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[10] Note that the OECD definitions of ISCED levels differ slightly from the Eurostat definitions.

ISCED 1 (primary education)
Begins between the ages of four and seven, is compulsory in all cases and lasts five or six years as a rule.

ISCED 2 (lower secondary education)
Compulsory schooling in all European countries. The end of this level corresponds often to the end of full-time compulsory school.

ISCED 3 (upper secondary education)
Begins around the age of 14 or 15 and refers to either general, technical or vocational education. It may lead to the standard required for admission to higher education or it may be "terminal", as is sometimes the case with vocational education and training.

ISCED 5, 6, 7 (higher education)
ISCED 5 covers programmes which generally do not lead to the awarding of a university degree or equivalent, but admission to this level usually requires the successful completion of a programme at the upper secondary level.
ISCED 6 covers programmes leading to a first university degree or equivalent.
ISCED 7 covers programmes leading to a second, post graduate university degree.

6.2 National education and training programmes within (previous) ISCED level 3

ISCED level 3 (previous version) comprises the following national education and training programmes:

Austria
Lehre (nach BAG); Lehre (nach LFBAG); Mittlere berufsbildende Schulen (Fachschulen, Handelsschulen); Krankenpflegeschulen; Schulen für den medizinisch-technischen Fachdienst; Land- und forstwirtschaftliche mittlere Schulen; Schulen zur Ausbildung von Leibeserziehern und Sportlehrern; Höhere berufsbildende und lehrerbildende Schulen (Lehranstalten, Handelsakademien, Bildungsanstalten); Aufbaulehrgänge; Land- und forstwirtschaftliche höhere Schulen

Belgium
Enseignement secondaire technique de transition; Enseignement secondaire technique de qualification courte; Enseignement secondaire technique de qualification longue 3^{e} degré; Enseignement secondaire professionnel - formation courte; Enseignement secondaire professionnel - formation longue; Enseignement secondaire professionnel - formation complémentaire; Enseignement secondaire en alternance - cycle inférieur (CEFA); Enseignement secondaire en alternance - cycle supérieur (CEFA); Enseignement spécial secondaire professionnel de forme 3: formation courte; Formation permanente pour les classes moyennes et les PME - apprentissage; Enseignement secondaire artistique : arts plastiques; Technisch secundair onderwijs (TSO) 2de graad; Technisch secundair onderwijs (TSO) 3de graad; Kunstsecundair onderwijs (KSO) 2de graad; Kunstsecundair onderwijs (KSO) 3de graad; Beroepssecundair onderwijs (BSO) 2de graad; Beroepssecundair onderwijs (BSO) 3de graad; Aanvullend secundair beroepsonderwijs (ASBO); Deeltijds beroepssecundair onderwijs (DBSO); Vorming in de leertijd (VIZO); Buitengewoon secundair onderwijs-opleidingsvorm 3

Denmark
Erhversuddannelser (EUD); Ehrvervsfaglig grunduddannelse (EGU); Eksamensuddannelser, diverse (sofart); Landbrugs-, gartner-, skovbrugsuddannnelser; Grundlaeggende social - og sundhedsuddannelser (SOSU)

Spain
Formación profesional de primer grado; Formación profesional de segundo grado; Modulos profesionales nivel II/ciclos formativos de grado medio; capacitación agraria; Programas de garantiá social; Artes plásticas y diseno grado medio; Ensenanza militar suboficiales; Artes Aplicadas y Oficios Artísticos; Escuelas taller; Casas de oficio; Ensenanzas musicales - grado medio

Finland
Teacher education programmes, Fine and applied arts programmes; Commercial and business admin. programmes; Medical and health programmes; Trade, craft and industrial programmes; Agriculture, forestry and fishery programmes; Home and economics programmes; transport and communication programmes; Service trades programmes; Other programmes

France
CAP Education nationale; BEP Education nationale; Bac Professionnel Education nationale;

Brevet de Technicien Education nationale: Formation Professionnelle de l'Enseignement adapté (Education nationale): CAP agriculture (CAPA): BEP agriculture (BEPA): Bac Professionnel Agricole: Brevet de Technicien Agricole (BTA): Apprentissage Educ. Nationale: CAP et titres homologués (brevet de compagnon, examen de fin d'apprentissage artisanal): BEP Apprentissage Educ. Nationale: Bac Prof Apprentissage Educ. Nationale: Brevet Prof ou de Maîtrise-Apprentissage Educ Nationale: Apprentissage Agricole : CAP et titres homologués: BEP Apprentissage Agricole: Bac Prof Apprentissage Agricole: Brevet Prof ou de Maîtrise-Apprentissage Agricole: Mentions Complémentaires (au CAP-BEP) - Educ. nationale: Mentions Complémentaires - Apprentissage Educ. nationale: Formations aux professions de la Santé (niveau enseignement secondaire): Formations aux professions sociales (niveau enseignement secondaire)

Germany
Dual System: Berufsgrundbildungsjahr (Basic Vocational Training Year): Berufsaufbauschulen (Vocational Extension Schools): Fachoberschulen (Specialised Vocational High Schools - 1 year): Fachgymnasien (Specialised Grammar Schools): Kollegschulen (only in North-Rhine-Westfalia): Berufs-/Technische Oberschulen: Fachoberschulen (Specialised Vocational High Schools - 2 years) : Berufsfachschulen (Specialised Vocational Schools): Beamtenanwärter mittlerer Dienst (Training for civil servants for the medium level)

Greece
Vocational and technical lykeia (TEL) of the ministry of education: Vocational and technical schools (TES) of the Ministry of education: Intergrated lykeia (branch of studies)

Ireland
certificate in farming: Farm apprenticeship scheme: Specific Skills Training: Apprenticeship (old and new system): Business/ technical/ secretarial courses: Cert. Craft Courses: Vocational preparation and training 2

Italy
Istituti tecnici (Technical colleges): Istituti Professionali (Vocational colleges) - 1° ciclo (qualifica): Istituti professionali (Vocational colleges) - 2° ciclo (diploma): Istituto magistrale (Teacher's training college): Scuola magistrale (Teacher training school) : Istituti d'arte (Fine arts' colleges) - 1° ciclo : Istituti d'arte (Fine arts colleges) - 2° ciclo (diploma): Corsi regionali di formazione professionale post-obbligo (Voc. Train. post-compulsory education): Corsi regionali di formazione professionale per utenze speciali (Training for specific groups)

Luxembourg
Apprentissage à deux degrés (CITP): Ens. sec. techn. - Régime professionnel plein temps de l'Est: Ens. sec. techn. - Régime professionnel concomitant de l'Est: Ens. sec. techn. - Régime professionnel filière mixte de l'Est: Ens. sec. techn. - Régime professionnel CCM de l'Est: Ens. sec. techn. - Régime technique de l'Est: Ens. sec. techn. - Régime de la formation de technicien de l'Est: Formation d'éducateurs (plein temps): Formation d'éducateurs (en cours d'emploi)

Netherlands
mbo - short, full-time: mbo -intermediate: mbo - long: mbo part-time (excl. agriculture) : mao - part-time: Apprenticeship - primary training: Apprenticeship - secondary training

Portugal
Cursos tecnológicos: Cursos tecno-profissionais: Escolas profissionais: cursos complementares tecnicos (Regime Nocturno): Ensino artístico: Aprendizagem - nivel II + nivel III

Sweden
Gymnasieskolan : yrkesinriktade program

United Kingdom
NVQ Level One: NVQ Level 2: NVQ Level 3: Other VQs (School and college based): Other VQs (Independent providers): GNVQ Foundation Level: GNVQ Intermediate Level: GNVQ Advanced Level

6.3 Revision of ISCED[11]

"Within the framework of ISCED, the term education is … taken to comprise all deliberate and systematic activities designed to meet learning needs. This includes what in some countries is

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11) Preliminary version; Source: UNESCO: International Standard Classification of Education. 151 EX/8, Annex II, March 1997.

referred to as cultural activities or training. Whatever the name given to it, education is understood to involve organised and sustained communfcation designed to bring about learning." (UNESCO 1997)

Unlike the previous ISCED, the revised version takes account of some *complementary dimensions*. These are:

- the type of subsequent education or destination for which completers are eligible or type of labour market positions for which they prepare graduates;
- the programme orientation, understood here as the degree to which the programme is specifically oriented towards a specific class of occupations or trades.

The preliminary version of ISCED (March 1997, not yet adopted) includes the following levels of education:

ISCED Level 0: Pre-primary education

Programmes at level 0, defined as the initial stage of organised instruction are designed primarily for very young children (aged at least 3 years) in a school-type environment, i.e. to provide a bridge between the home and a school based atmosphere. Upon completion of these programmes, children continue their education at level 1.

ISCED Level 1: Primary education or first stage of basic education

Programmes at level 1 are normally designed on a unit or project basis to give students a sound basic education in reading, writing and mathematics along with an elementary understanding of other subjects. The customary or legal age of entrance being not younger than five years or older than seven years. This level covers in principle six years of full-time schooling.

ISCED level 2: Lower secondary or second stage of basic education

The contents of education at this stage are typically designed to complete the provision of basic education which began at ISCED level 1. Entry to level 2 is normally after some 6 years of primary education. In many, if not most countries, the educational aim is to lay the foundation for lifelong learning and human development. The programmes at this level are usually on a more subject-oriented pattern. The full implementation of basic skills occurs at this level. The end of this level often coincides with the end of compulsory education. This level includes special needs education programmes and all adult education programmes which are similar, e.g. the education which gives to adults the basic skills necessary for further learning.

Complementary dimensions

a) *Subsequent education or destination*
ISCED 2A: direct access to ISCED 3A or 3B
ISCED 2B: direct access to ISCED 3C
ISCED 2C: direct entry into the labour market

b) *Programme orientation*

- General education (typically school-based)
- Pre-vocational and pre-technical education (introduction to the world of work and preparation for entry into vocational and technical education programmes; successful completion does not yet lead to a labour market relevant vocational or technical qualification)
- Vocational and technical education (to acquire practical skills necessary for employment in a particular or a class of occupation/trade. Successful completion leads to a labour market relevant and recognised vocational qualification. Programmes in this category may be subdivided into two types: (1) primarily theoretically oriented; (2) primarily practically oriented)

Outline of ISCED level 2

Type of subsequent education or destination ⇨	Programmes giving acess to ISCED level 3		**ISCED 2C** programmes not giving access to level 3 but preparing only for direct entry into the labour market
Programme orientation ⇩	**ISCED 2A:** access to ISCED 3A or 3B	**ISCED 2B:** access to ISCED 3C	
general education			▨
Pre-vocat. or pre-technical			
vocational or technical			

ISCED level 3: (Upper) Secondary education

This level of education typically begins at the end of full-time compulsory education. More specialisation may be observed here than at ISCED level 2. The entrance age to level 3 is typically 15 or 16 years.

The programmes at level 3 typically require the completion of some 9 years of full-time education for admission or a combination of education and vocational/technical experience and - as minimum entrance requirements - the completion of level 2 or demonstrable ability to handle programmes at this level. This level includes also special needs education programmes and adult education.

Complementary dimensions

a) *Subsequent education or destination*
ISCED 3A: direct access to ISCED 5A
ISCED 3B: direct access to ISCED 5B
ISCED 3C: direct entry into the labour market, to ISCED 4 programmes or other ISCED 3 programmes.

b) Programme orientation (same as for ISCED 2)

- ☐ General education;
- ☐ Pre-vocational and pre-technical education;
- ☐ Vocational and technical education.

c) Cumulative theoretical duration
The cumulative theoretical duration of the programme, in full-time equivalent, is calculated from the beginning of level 3. This dimension is particularly useful for level 3C programmes.

Outline of ISCED level 3

Type of subsequent education or destination ⇨	**ISCED level 3** programmes giving acess to ISCED level 5		**ISCED 3C** programmes **not** giving access to level 5 but to labour market, level 4 or other level 3 programmes;			
Programme orientation ⇩	**ISCED 3A:** giving access to ISCED 5A	**ISCED 3B:** giving access to ISCED 5B	duration (months/years)			
			<6m	6m -<1y	1y -<2y	>2y
general education			■	■	■	■
Pre-vocat. or pre-technical						
vocational or technical						

ISCED level 4: Post-secondary non-tertiary education

ISCED 4 covers programmes that straddle the boundary between upper secondary and post-secondary education from an international point of view, even though they might clearly be considered as upper secondary or post-secondary programmes in a national context. ISCED 4 programmes cannot be regarded as tertiary programmes; they are often not significantly more advanced than ISCED 3 programmes but they serve to broaden the knowledge of participants who have already completed a programme at level 3.

Typical examples are programmes designed to prepare students for studies at level 5 who, although having completed level 3, did not follow a curriculum which would allow entry to level 5. Second cycle programmes can be included as well.

Classification criteria:

- ☐ Level 4 programmes require as a rule the successful completion of level 3A or 3B, or, for 3C programmes, a cumulative theoretical duration of typically 3 years at least.
- ☐ The programme content is more specialised or detailed and the applications are more complex in some cases than those at level 3;
- ☐ The students are typically older than those in upper secondary programmes;
- ☐ It has a typical full-time equivalent duration of between 6 months and 2 years.

Complementary dimensions

a) *Subsequent education or destination*
ISCED 4A: prepare for entry to ISCED 5
ISCED 4B: direct entry into the labour market.

b) Programme orientation (same as for ISCED 2and 3)

- ☐ General education;
- ☐ Pre-vocational and pre-technical education;
- ☐ Vocational and technical education.

c) Cumulative theoretical duration
The cumulative duration is to be considered from the beginning of ISCED 3.

Outline of ISCED level 4

Type of subsequent education or destination ⇨	Programmes giving access to ISCED level 5 programmes				Programmes **not** giving access to level 5 but to labour market			
Programme orientation ⇩	**ISCED 4A** programmes cum. duration (years):				**ISCED 4B** programmes cum. duration (years):			
	<2	2-3	3-4	>4	<2	2-3	3-4	>4
general education								
Pre-vocat. or pre-technical								
vocational or technical								

ISCED level 5: First stage of tertiary education (not leading directly to an advanced research qualification)

This level consists of tertiary programmes having an educational content more advanced than those offered at levels 3 and 4. Entry to these Programmes normally requires the successful completion of ISCED level 3A or 3B or a similar qualification at ISCED level 4A. Level 5 programmes do not lead directly to the award of an advanced research qualification (level 6). They must have a cumulative theoretical duration of at least 2 years from the beginning of level 5.

Complementary dimensions

a) type of programmes
To be considered is the distinction between (1) ISCED level 5A (theoretically based, research preparatory or programmes which give access to programmes for professions with high skills requirements);
(2) ISCED level 5B (practical, technical or occupationally specific programmes).

b) Cumulative theoretical duration
For initial programmes at tertiary level, the cumulative theoretical duration is the full-time equivalent duration from the beginning of level 5.

c) National degree and qualification structure
Both ISCED 5A and 5B levels are cross-classified by their position in the national qualification structure for tertiary education within an individual country.

The 'position' of a degree is assigned based on the international hierarchy of awards within national educational systems. When 'theoretically based' programmes are organised and provide sequential qualifications, usually only the last qualification is given direct access to level 6, but all these programmes are allocated to level 5A.

'Bachelor's degree' in many English speaking countries, the 'Diplom' in many German speaking countries, and the 'Licence' in many French speaking countries meet the criteria for the first theoretically-based programmes (ISCED 5A). This level includes all the research programmes which are not part of a doctorate, such as any type of Master's degree, Maîtrise, etc.

It is only by combining national degree structure with other tertiary dimensions, such as cumulative theoretical duration and programme orientation, that enough information is available to group degrees and qualifications of similar education content.

Outline of ISCED level 5

Theoretical cumulative duration at tertiary level (years)	**ISCED 5A** programmes			**ISCED 5B** programmes	
	First degree	Second and further degree	Research	First qualification	Second qualification
2-3					
4-5					
5-6					
6 and +					

ISCED level 6: Second stage of tertiary education (leading to an advanced research qualification)

This level is reserved for tertiary programmes which lead to the award of an advanced research qualification. The programmes are therefore devoted to advanced study and original research and are not based on course work only.

Main citerion: The programme requires the submission of a thesis or dissertation of publishable quality which is the product of original research and represents a significant contribution to knowledge. Subsidiary criterion: it prepares graduates for faculty posts in institutions offering ISCED 5A programmes, as well as research posts in government, industry, etc.

As the scope of this level is very restricted, no complementary dimension is needed.

CEDEFOP – European Centre for the Development of Vocational Training

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Manfred Tessaring
(CEDEFOP)

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